



# ABB i-bus<sup>®</sup> KNX Application Unit Time ABZ/S 2.1 Product Manual



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## 1 General

Complex timer operations and time controllers are becoming increasingly important in modern buildings with ABB i-bus<sup>®</sup> KNX. Time-controlled day or week routines e.g. of lighting installations should be implemented in buildings, factories or hotels. In schools, the lighting should e.g. be switched off at the weekend for energy reasons or the heating system should be lowered to a minimum using time control. In hotels, it should be possible to set different lighting or ventilation sequences for different events. In underground car parks for example, different time sequences should apply on different days of the week. Even year time switch programs and group formation should be implemented in continually recurring processes.

All the previously described applications can be parameterised using the Application Unit Time.

This manual provides you with detailed technical information about the Application Unit Time including its installation and programming and explains its application using examples.

The manual is divided into the following chapters:

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

## 1.1 Product and functional description

The Application Unit Time ABZ/S 2.1 is a DIN rail mounted device for insertion in the distribution board. The connection to the bus is carried out via a bus connecting terminal at the front of the device. Both the assignment of the physical address and the setting of parameters are carried out with ETS3 from version V1.0.

The device is supplied via the ABB i-bus<sup>®</sup> and does not require an additional power supply.

The processing is carried out in the application program ***Times Groups/2***.

The device is characterised by its comprehensive and clear functionality which enables its use in a wide variety of applications. The following list provides an overview:

- Multi-channel time switch with
  - year time switch program, week routine and day routine
  - input of daylight saving times and special days
- Recording of groups

## 2 Device technology



Fig. 1: ABZ/S 2.1

The Application Unit Time is a DIN rail mounted device for insertion in the distribution board. The device contains a year time switch program with the option of defining day routines and week routines individually. Complex group formations are also possible.

The device is ready for operation after connecting the bus voltage. The Application Unit Time is parameterised via ETS3. The connection to the bus is established via the bus connecting terminal at the front of the device.

### 2.1 Technical data

<b>Power supply</b>	- Bus voltage	21 ... 32V DC
	- Power consumption, bus	< 12mA
	- Leakage loss, bus	Max. 250mW
<b>Connections</b>	- KNX	Via bus connecting terminal
<b>Operating and display elements</b>	- Programming LED (3)	For assignment of the physical address
	- Programming button (2)	For assignment of the physical address
<b>Type of protection</b>	- IP 20	In accordance with DIN EN 60 529
<b>Protection class</b>	- II	In accordance with DIN EN 61 140
<b>Insulation category</b>	Overvoltage category	III in accordance with DIN EN 60 664-1
	Degree of pollution	2 in accordance with DIN EN 60 664-1
<b>KNX safety extra-low voltage</b>	SELV 24 V DC	
<b>Temperature range</b>	- Operation	- 5°C...+45°C
	- Storage	-25°C...+ 55°C
	- Transport	-25°C...+ 70°C
<b>Ambient conditions</b>	- Maximum air humidity	93%, moisture condensation not permitted
<b>Design</b>	- DIN rail mounted device (MDRC)	Modular installation device, ProM
	- Dimensions	90 x 36 x 64.5mm (H x W x D)
	- Mounting width in modules	2.2 modules at 18mm
	- Mounting depth	64.5mm
<b>Installation</b>	- On 35mm mounting rail	In accordance with DIN EN 60 715
<b>Mounting position</b>	- As required	
<b>Weight</b>	- 0.1kg	
<b>Housing/colour</b>	- Plastic housing, grey	
<b>Certification</b>	- KNX in accordance with EN 50 090-1, -2	Certificate
<b>CE norm</b>	- In accordance with the EMC and low voltage guidelines	

Table 1: Technical data



Device type	Application program	Maximum number of communication objects	Maximum number of group addresses	Maximum number of associations
ABZ/S 2.1	Times Groups/...*	250	250	254

\* ... = current version number of the application program

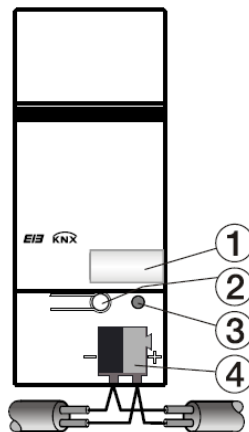
Table 2: Application program

**Note:** The ETS and the current version of the device application program are required for programming.

The current version of the application program is available for download on the Internet at [www.abb.com/knx](http://www.abb.com/knx). After import it is available in the ETS under *ABB/Controller/Controller*.

The device does not support the closing function of a KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code*, it has no effect on this device. Data can still be read and programmed.

## 2.2 Circuit diagram

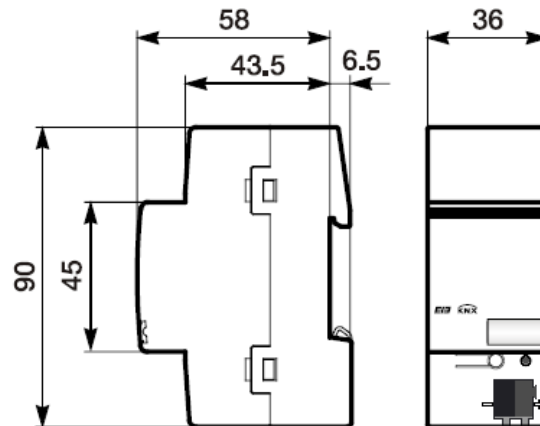


2CDC 072 053 F0005

Fig. 2: Circuit diagram

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

### 2.3 Dimension drawing



2CDC 072 051 F0006

Fig. 3: Dimension drawing

### 2.4 Assembly and installation

The Application Unit Time is a DIN rail mounted device for insertion in distribution boards for snap-on mounting on 35mm mounting rails, in accordance with DIN EN 60 715.

The connection to the bus is carried out via the bus connecting terminal supplied.

The device is ready for operation once the bus voltage has been applied.

The accessibility of the devices for operation, testing, inspection, maintenance and repair must be ensured (according to DIN VDE 0100-520).

#### Commissioning requirements

To put the Application Unit Time into operation, a PC with ETS3 and an interface connection to the ABB i-bus<sup>®</sup>, e.g. via an RS232 interface or a USB interface are required.

The device is ready for operation once the bus voltage has been applied.

The installation and commissioning may only be carried out by specialist electricians. When planning and setting up electrical installations, the relevant norms, guidelines, standards and specifications must be observed.

- Protect the device against damp, dirt and damage during transportation, storage and operation.
- Only operate the device within the specified technical data!
- Only operate the device in an enclosed housing (distribution board)!

**Supplied state**

The Application Unit Time is supplied with the physical address 15.15.255. The application program is pre-loaded. During the commissioning stage, only group addresses and parameters need to be loaded. If required, the complete application program can be reloaded. When changing the application program or after unloading, a longer download process may occur.

**Download behaviour**

Due to the complexity of the device, it can take up to 1.5 min. during a download until the progress bar appears, depending on the computer being used.

**Assignment of the physical address**

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

**Cleaning**

Dirty devices can be cleaned with a dry cloth. If this is not sufficient, a cloth that has been moistened with soap may be used. Corrosive cleaning agents or solvents may not be used in any event.

**Maintenance**

The device is maintenance-free. In the event of damage (e.g. during transportation, storage), repairs may not be carried out by a third party. The right to claim under guarantee expires when the device is opened.

### 3 Commissioning

#### 3.1 Overview

The application program **“Times Groups/2”** is available for the Application Unit Time. Programming requires ETS3. A maximum of 250 communication objects, 250 group addresses and 254 associations can be linked.

The following functions are available:

<b>Time switch program</b>	Defines when telegrams with specific group addresses and values are sent on the bus.
<b>Day routines</b>	Contains the time program of a day from 00:00 to 23:59. Day routines can be activated and deactivated by the time switch program and by telegrams. There are 15 day routines available.
<b>Switching times</b>	Up to 800 switching times can be assigned to the day routines.
<b>Week routine</b>	Defines the assignment of day routines to the days of the week. There is one week routine available.
<b>Special days</b>	Special days denote individual days or time intervals which deviate from the standard week routine. There are 100 special days available.
<b>Daylight saving times</b>	Automatic calculation of the daylight saving times. A total of 10 consecutive years can be calculated.
<b>Group</b>	A combination of group addresses which are sent at the same time. There are 30 groups available.
<b>Group members</b>	Group addresses which belong to a group. There are 300 group members available.
<b>Group triggers</b>	Group addresses which trigger a group. The type and value of the group address determine the triggering of the group e.g.: “0” switches ON, “1” switches OFF, “Value < 230” switches ON, “Value > 250” switches OFF.

Table 3: Functions of the application program

### 3.2 Parameterisation software (PZM 2.0)

The parameterisation software “PZM 2.0” is used by the system operator and offers the following options:

- loading the installation configuration which has been created in ETS into the ABZ/S 2.1.
- modifying the time switch program and then downloading the program to the ABZ/S 2.1
- saving of the modified time switch program
- reading out and setting the time and date of the ABZ/S 2.1
- reading out the status information of the ABZ/S 2.1.

Note: The parameterisation software PZM 2.0 has its own manual which can be downloaded from the Internet.

### Parameterising the ABZ/S 2.1 with ETS

A comment for the system operator should be entered in the “Description” field in the ETS3 “Properties” window e.g. project name, function of the Application Unit Time in the installation and the date.

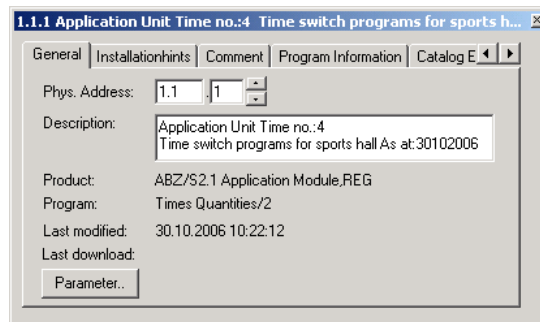


Fig. 4: ETS3 “General” dialog window

**Note:** This information is displayed in the table area of the parameterisation software **PZM 2.0** as “Comment of the installer” after loading the time switch program.

### 3.3 Interface

#### 3.3.1 ABB – Times Groups/2

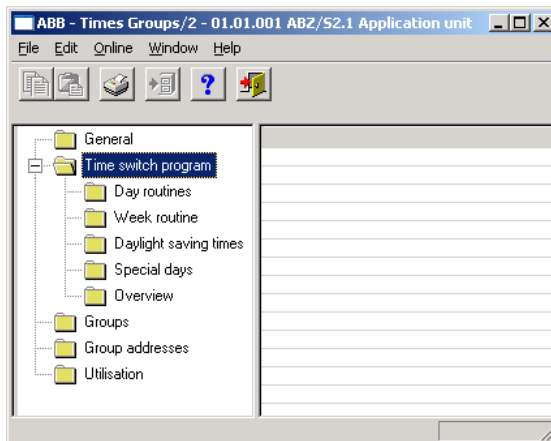


Fig. 5: "Times Groups/2" screen

#### 3.3.2 Title bar



Fig. 6: "Title bar" screen

The title bar contains information about the manufacturer, the name of the application program, the physical address as well as the type and the name of the device.

#### 3.3.3 Menu bar



Fig. 7: "Menu bar" screen

The File, Edit, Online, Window and Help menus are visible in the menu bar.

#### 3.3.4 Status bar



Fig. 8: "Status bar" screen

The status bar can be activated or deactivated in the *Window* menu, under the *Status bar* menu item.

If it is activated, it always forms the lower border of the parameter window. It indicates for the current selection in the table area the number of available elements for further entries.

### 3.3.5 File menu

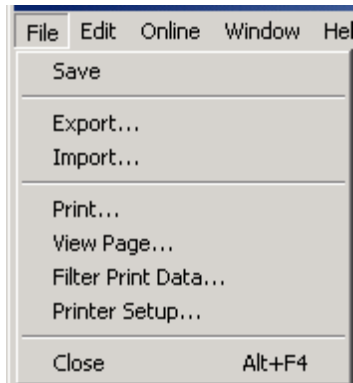


Fig. 9: "File" menu

Some menu items are context-sensitive and are only activated for specific configurations. Inactive menu items are greyed out.

#### 3.3.5.1 Save

The parameter data is stored in the ETS3 database by selecting the **Save** menu item.



### 3.3.5.2 Export

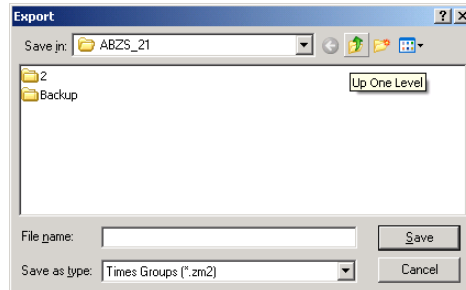


Fig. 10: "Export" screen

By selecting the *Export* menu item, the time switch program is saved as a Times Groups (\*.zm2) file or in CSV format (\*.csv).

**Note:** Files with the ending .zm2 can be imported in the parameterisation software PZM2 and edited.  
Files with the ending .csv can be imported in other programs e.g. data processing programs or spreadsheets and edited further.

### 3.3.5.3 Import

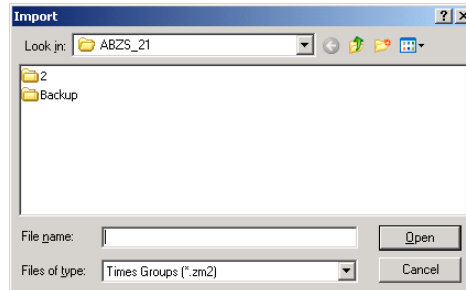


Fig. 11: "Import" screen

By selecting the *Import* menu item, the time switch program which has been exported from the application program or the parameterisation software **PZM2** is read in as a .zm2 file.

**Note:** Older **.zm1 files** can be imported in the Application Unit Time ABZ/S 2.1 and edited.

When importing a zm2 file into an existing ETS3 project, the parameters that were saved in the edited project are overwritten.

When importing the .zm2 file, note that changes have possibly been carried out to the time switch program since exporting the file.

It is strongly recommended that you back up the data in the ETS3 project before each import.

### 3.3.5.4 Print

By selecting the *Print* menu item, parameter settings are printed out in tabular form.

3.3.5.5 View page

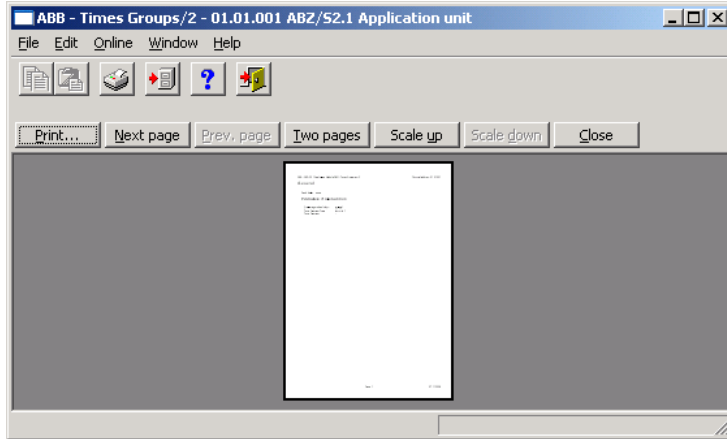


Fig. 12: "View page" screen

By selecting the *View page* menu item, the parameter assignment that is to be printed out is shown on the screen.

### 3.3.5.6 Filter print data

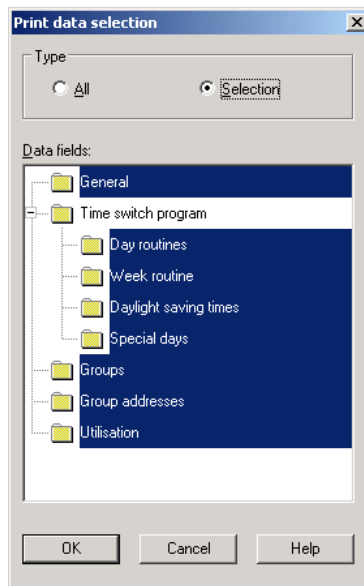


Fig. 13: "Filter print data" screen

By selecting the menu item *Filter print data*, those parts of the parameter assignment which should be printed out are selected.

#### Type

Options: All  
Selection

Option *All* = The entire configuration is printed out.

Option *Selection* = Only certain parts of the configuration are printed out. Select the entries which should be printed out with the left mouse button, while holding down the Control button [Ctrl].

#### "OK" button

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

### 3.3.5.7 Printer setup

You can select and set up a printer by selecting the menu item *Printer setup*.

### 3.3.5.8 Close

The application program is closed by selecting the *Close* menu item. You then return to the *Properties* dialog window in ETS3. You are asked to save the data if necessary.

Hotkey: Alt+F4

### 3.3.6 Edit menu

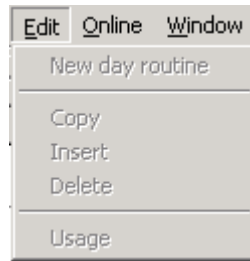


Fig. 14: "Edit" menu

Some menu items are context-sensitive and are only activated for specific configurations. Inactive menu items are greyed out.

#### 3.3.6.1 New day routine

Creates a day routine, switching time, daylight saving time, special day, group, group trigger or group member, depending on the context.

#### 3.3.6.2 Copy

Copies the marked line to the clipboard.

#### 3.3.6.3 Insert

Inserts the contents of the clipboard as a new entry.

#### 3.3.6.4 Delete

Deletes the marked line.

#### 3.3.6.5 Usage

Indicates the usage of a marked parameter.

### 3.3.7 Online menu

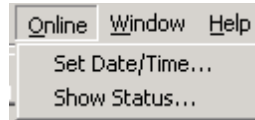


Fig. 15: "Online" menu

Some menu items are context-sensitive and are only activated for specific configurations. Inactive menu items are greyed out.

### 3.3.7.1 Set date/time

When selecting the menu item *Set date/time...*, the date and time of the internal clock are read from the Application Unit Time or set.

The prerequisite is that the physical address and the application program of the Application Unit Time ABZ/S 2.1 must have been loaded beforehand.

After selecting the menu item *Set date/time...*, the associated dialog window opens.

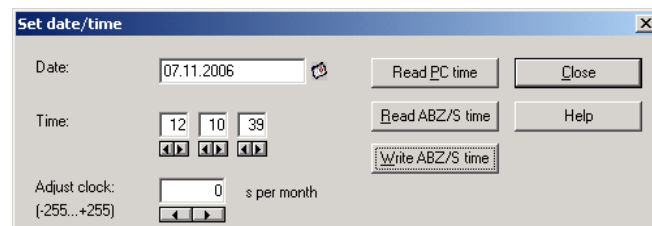


Fig. 16: Parameter window: "Online menu, Set date/time"

#### Date

Options: Enter date

The *date* can be set in a range between 1.1.2000 and 31.12. 2035. It is displayed as numbers which are separated by full stops in the sequence day.month.year. On the right-hand side of the input field for the date, there is a button which is used to display the relevant calendar for the current date.

Note: When opening the dialog field, the current date of the PC is automatically read and displayed.

#### Time

Options: Enter time

The *time* is shown in hours, minutes and seconds. The displays for hours, minutes and seconds can be edited separately via the *Left arrow* and *Right arrow* buttons.

Note: When opening the dialog field, the current time of the PC is automatically read and displayed.



**“Read PC time” button, “Read ABZ/S time” button**

The *Date* and *Time* fields can be updated with the corresponding time via the buttons *Read PC time* and *Read ABZ/S time*.

**“Write ABZ/S time” button**

The date and time can also be set via the *Write ABZ/S time* button.

Note: The time switch program is updated by adjusting the clock. Switching operations can be triggered as a result.

**Adjust clock**

Options: -255...0...+255

The accuracy of the internal clock is dependent in particular on the ambient temperature and can be up to +/- 1 min per month. By entering a correction value in the text field *Adjust clock*, the accuracy of the internal clock is improved. If the clock gains e.g. 20 seconds a month, this inaccuracy can be compensated by entering a correction value of “20” which corresponds to 20 seconds.

**“Close” button**

When the “Close” button is pressed, the function is closed and the parameter window *Set time/date* closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

### 3.3.7.2 Show status

After selecting *Online* and *Show status*, the device status is read from the Application Unit Time and the following parameter window opens.

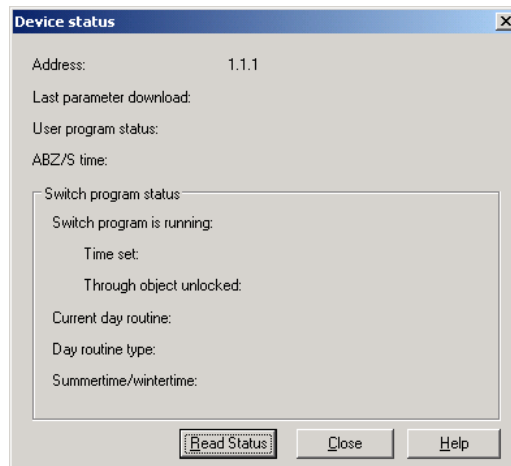


Fig. 17: Parameter window: "Online menu, Show status"

The *Device status* parameter window indicates:

- the address of the Application Unit Time in the ABB i-bus<sup>®</sup> installation
- the date and time when the parameterisation data was loaded into the Application Unit Time
- the status of the application program which is running in the Application Unit Time
- the date and current time of the internal clock in the Application Unit Time
- the status of the time switch program
- the current day routine
- the type of the current day routine
- the status of the daylight saving time

#### "Read status" button

The parameter window is updated via the *Read status* button.

#### "Close" button

The parameter window is closed via the *Close* button.

#### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

### 3.3.8 Window menu

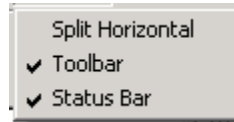


Fig. 18: "Window" menu

#### 3.3.8.1 Split horizontal

Options:           activated = tick  
                      not activated = no tick

The window of the table area can be divided. The same parameterisation data is displayed in both partial views. The copying of elements is thereby simplified e.g. in partial view 2, entries are copied from day routine 5 and inserted via drag & drop or copy & paste in day routine 7 of partial view 1.

#### 3.3.8.2 Toolbar

Options:           activated = tick  
                      not activated = no tick

The toolbar can be activated or deactivated.

#### 3.3.8.3 Status bar

Options:           activated = tick  
                      not activated = no tick

The status bar can be activated or deactivated.

### 3.3.9 Help menu

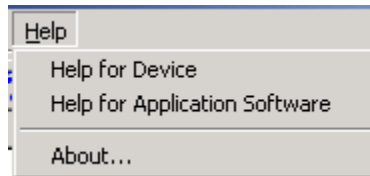


Fig. 19: "Help" menu

#### 3.3.9.1 Help for device

By selecting the menu item *Help for device*, brief information about the hardware of the Application Unit Time is displayed.

#### 3.3.9.2 Help for application software

An extensive "Help" file appears after selecting the menu item *Help for application software*.

Hotkey: F1

#### 3.3.9.3 About...



Fig. 20: "About..."

Information about the application program and the manufacturer of the device is displayed by selecting the *About...* menu item.

#### "OK" button

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

### 3.3.10 Toolbar



Fig. 21: "Toolbar" screen

The toolbar contains buttons with the most important commands. The buttons are context-sensitive and are only activated for specific configurations.

The toolbar can be activated or deactivated in the *Window* menu under the *Toolbar* menu item.

#### 3.3.10.1 Copy



Fig. 22: "Copy" symbol

Copies the marked line to the clipboard.

#### 3.3.10.2 Paste



Fig. 23: "Paste" symbol

Inserts the contents of the clipboard as a new line.

#### 3.3.10.3 Print



Fig. 24: "Print" symbol

Prints the parameter data in tabular form.

### 3.3.10.4 Save



Fig. 25: "Save" symbol

Saves the parameter data in ETS3.

### 3.3.10.5 Help



Fig. 26: "Help" symbol

Opens the "Help" file of the application program.

Hotkey: F1

### 3.3.10.6 Close



Fig. 27: "Close" symbol

Closes the application program. Asks if you wish to save the data, if necessary.

### 3.3.10.7 Hotkey selection

- Alt + F4           Close
- F1                    Help

### 3.4 Parameters

#### 3.4.1 General

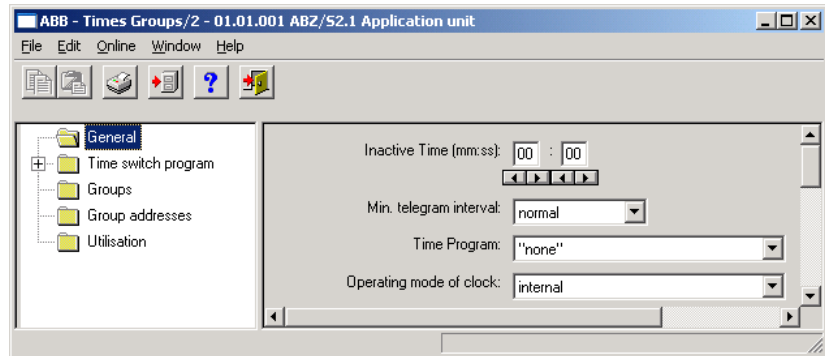


Fig. 28: Parameter window: "General"

The general parameters are shown in the right-hand window.

#### Inactive time (mm:ss)

Options: (mm) 00...59  
(ss) 00...59

This parameter sets the *Inactive time* on bus voltage recovery and during a download. During this period, no telegrams are sent and any received telegrams are not evaluated. The displays for minutes and seconds can be edited separately via the *Left arrow* and *Right arrow* buttons.

#### Min. telegram interval

Options: normal / 0.1 s / 0.2 s / 0.3 s / 0.4 s / 0.5 s

The parameter *Min. telegram interval* sets at which minimum intervals the Application Unit Time should send telegrams in sequence.

The option *normal* means that no delay is inserted.

An example:

If a *Min. telegram interval* of 0.5 s is set and 5 telegrams should be sent, the last telegram is sent 2.5 s after the first telegram.

**Time program**

Options: none / new group address

It can be set with this parameter whether the time program is locked or unlocked via a group address.

Option *none* = Time program cannot be locked or unlocked.

Option *new group address* = Time program can be locked or unlocked via a newly created group address.



After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

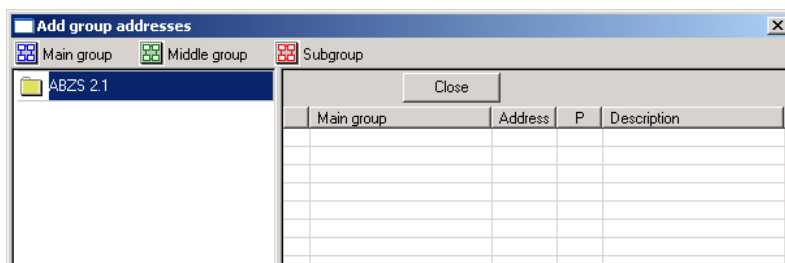


Fig. 29: Dialog window: "Time program, Add group addresses"

The main group, middle group and the subgroup are created in sequence via drag & drop.

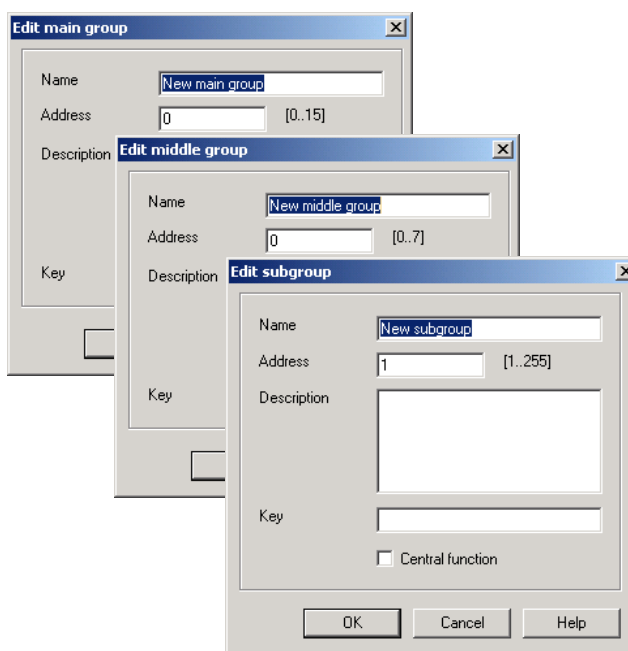


Fig. 30: Parameter window: "Time program, Create new main group, middle group and subgroup"

**Note:** The function descriptions and screenshots of the application program in this product manual all relate to ETS3. The application program for ETS4 has now become available.

The only difference between both program versions is the number of possible main groups:  
 ETS3 = up to 15 main groups  
 ETS4 = up to 31 main groups

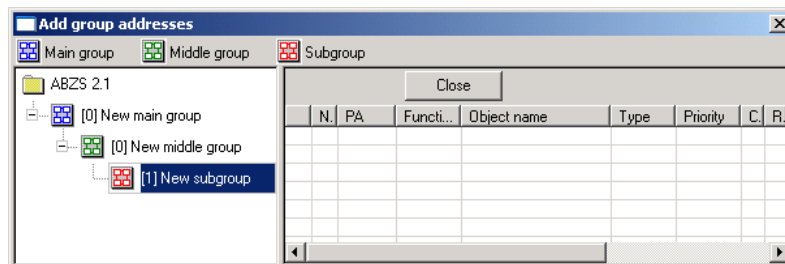


Fig. 31: Dialog window: "Time program, Main group, middle group and subgroup created"

By marking *New middle group* in the left-hand window, the newly created group address is visible in the right-hand window.

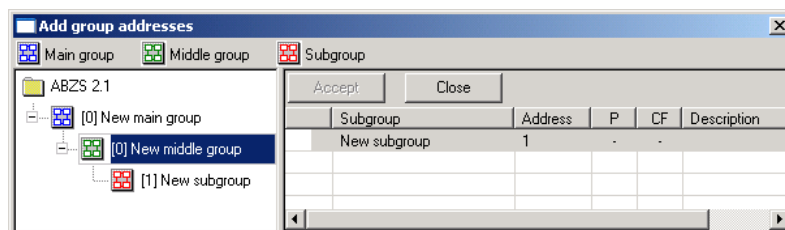


Fig. 32: Dialog window: "Time program, Middle group marked"

The *Accept* button is activated by clicking on the group address in the right-hand window.

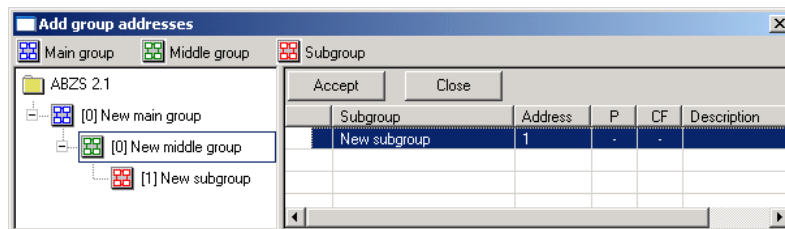


Fig. 33: Dialog window: "Time program, Subgroup marked"

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

After selecting a newly created group address, an additional option appears on the right-hand side.

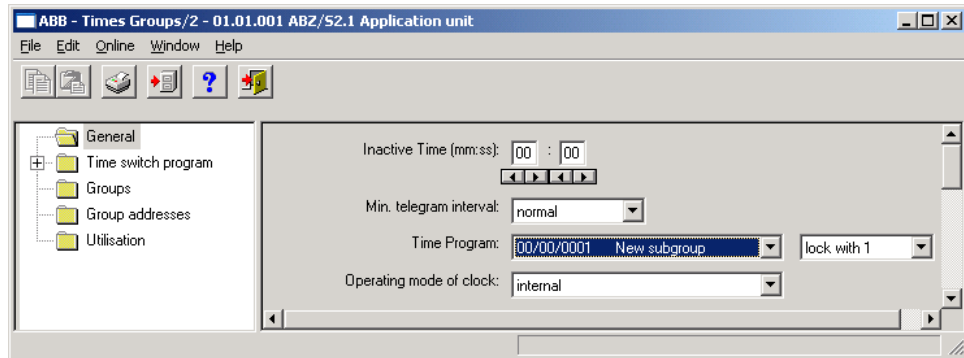


Fig. 34: Parameter window: "General, Lock time program"

Options: lock with 1 / unlock with 1

*lock with 1* means            "0"     unlock  
    "1"     lock

*unlock with 1* means        "0"     lock  
    "1"     unlock

This parameter selects whether the time switch program is locked or unlocked with a "1".

### 3.4.1.1 Operating mode of clock

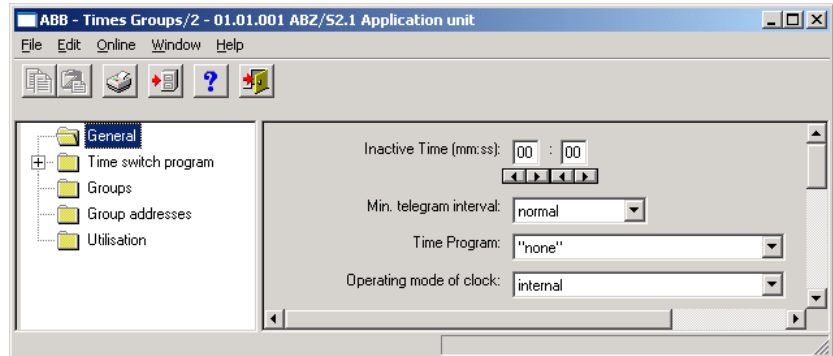


Fig. 35: Parameter window: "General, Operating mode of clock"

#### Operating mode of clock

Options: internal/  
 Slave (always receive)/  
 Slave disable time (00:05 ... 23:55 receive)/  
 Master (send every minute)/  
 Master (send hourly)/  
 Master (send daily)

#### How does the internal clock work?

In the Application Unit Time, an internal clock controls the time switch program. The clock is supplied with bus voltage. In the event of a bus voltage failure, the internal clock has a power reserve of at least 1 h. In the event of a bus voltage recovery within the reserve period, the time switch program starts again automatically. Once the power reserve has elapsed, the current date and time are lost and the time switch program is stopped until the date and time are reset.

The clock can be set automatically through a telegram from a master clock or the clock must be set via the application program or using the parameterisation software PZM2.



The time switch program is updated by adjusting the clock. Switching operations can be triggered as a result.

If the time switch program should start automatically after a bus failure, the clock must be operated as a slave and a group address should be assigned to the parameter *Group address for request* which then requests the sending of the current time by a master clock.

Once the power reserve has elapsed, a cold start is carried out in which the assigned group address is sent and the current time is requested. The internal clock is then synchronised with the master clock and the time switch program is updated and restarts.



The time switch program is updated by adjusting the clock. Switching operations can be triggered as a result.

**Option: Internal**

With the *Internal* option, it is not possible to set the date and time on the bus or to send telegrams from the bus.

If the option *Slave (always receive)*, *Slave disable time (00:05 ... 23:55 receive)*, *Master (send every minute)*, *Master (send hourly)* or *Master (send daily)* is selected, the following parameters are visible.

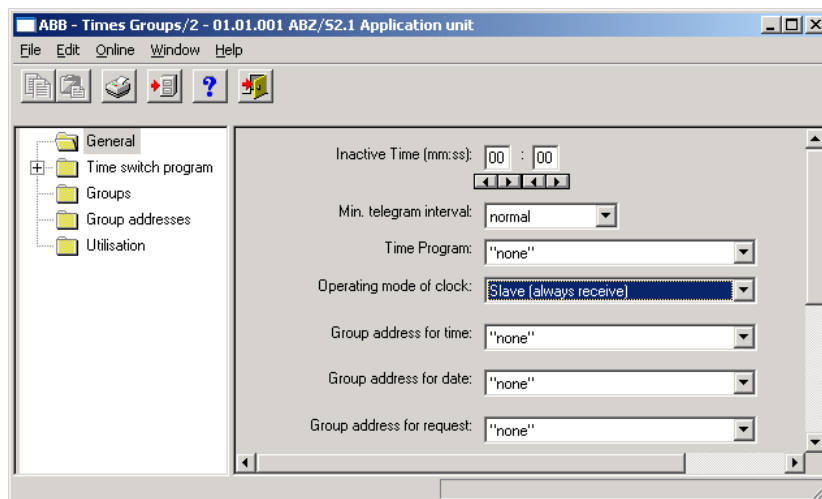


Fig. 36: Parameter window: "General, Operating mode of clock, Slave (always receive)"

### Group address for time / date / request

Options: none /  
new group address

If slave or master is selected as the operating mode, the group addresses for the time and date and for requesting the time and date appear – if group addresses have already been assigned in ETS3.

If no group addresses have yet been assigned in ETS3 or no new group addresses have yet been created, the options are preset with *none*.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

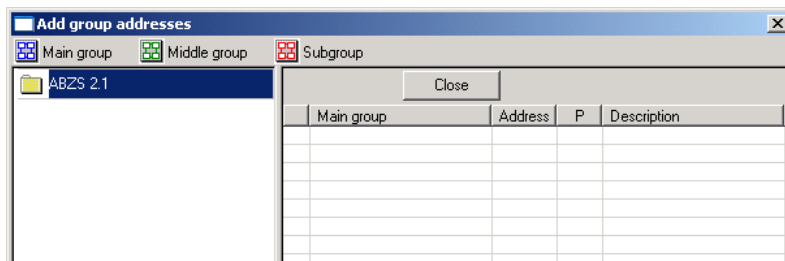


Fig. 37: Dialog window: "Operating mode of clock, Add group addresses"

The main group, middle group and the subgroup are created in sequence via drag & drop.

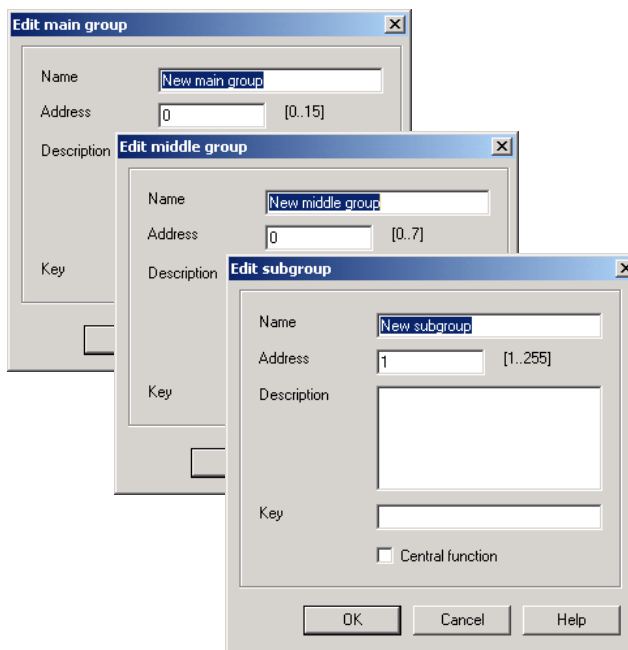


Fig. 38: Parameter window: "Operating mode of clock, Create new main group, middle group and subgroup"

**Note:** The function descriptions and screenshots of the application program in this product manual all relate to ETS3. The application program for ETS4 has now become available.

The only difference between both program versions is the number of possible main groups:

ETS3 = up to 15 main groups

ETS4 = up to 31 main groups

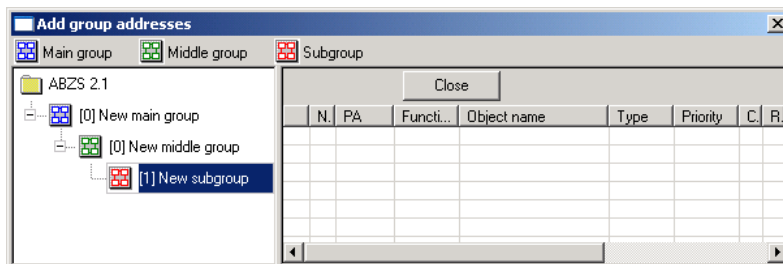


Fig. 39: Dialog window: "Operating mode of clock, Main group, middle group and subgroup created"

By marking *New middle group* in the left-hand window, the newly created group address is visible in the right-hand window.

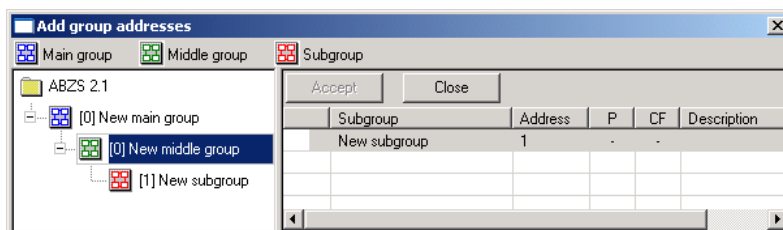


Fig. 40: Dialog window: "Operating mode of clock, Middle group marked"

The *Accept* button is activated by clicking on the group address in the right-hand window.

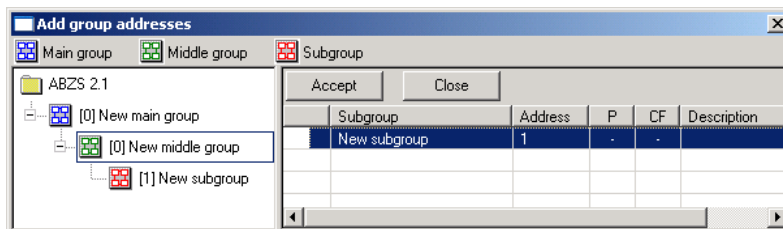


Fig. 41: Dialog window: "Operating mode of clock, Subgroup marked"

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.



**Option: Slave (always receive)**

The internal clock can be set or synchronised via a telegram e.g. from a master clock.

**Option: Slave disable time (00:05 ... 23:55 receive)**

The internal clock can be set and synchronised via a telegram e.g. from a master clock between 00:05 and 23:55. Date and time telegrams are ignored in the period between 23:55 and 00:05. It is thus possible to avoid synchronisation problems when the day changes.

**Option: Master (send every minute)**

The internal clock sends telegrams with the time and date once per minute e.g. to synchronise other EIB devices. The time and date can be queried via communication object no. 250 "Request object".

If a group address has been assigned to the parameter *Group address for request*, the current time and date can be requested from a master clock at any time.

If the internal clock is programmed as a master, it sends telegrams with the new time and date on the bus, once the time has been set with the help of the application program.



The time switch program is updated by adjusting the clock. Switching operations can be triggered as a result.

**Option: Master (send hourly)**

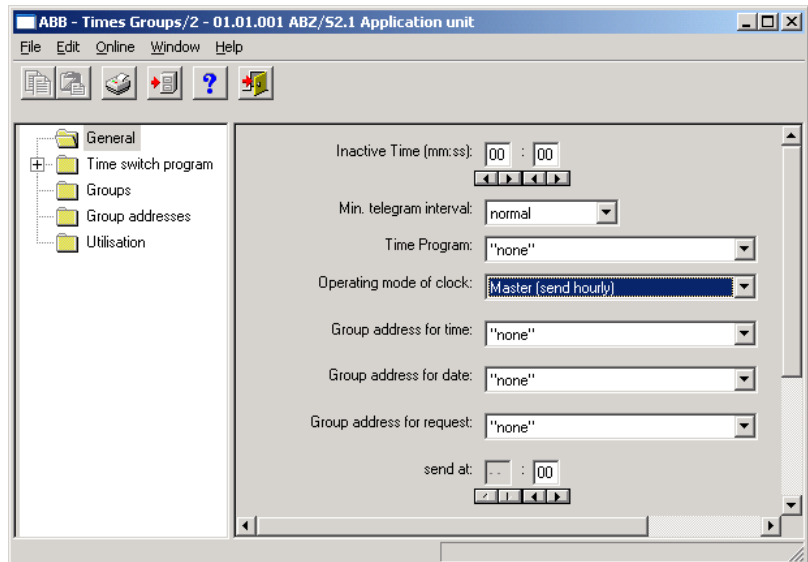


Fig. 42: Parameter window: “General, Operating mode of clock, Master (send hourly)”

The internal clock sends telegrams with the time and date once per hour e.g. to synchronise other EIB devices. You are requested to enter a time (minute) for sending. The time and date can be queried via communication object no. 250 “Request object”.

If a group address has been assigned to the parameter *Group address for request*, the current time and date can be requested from a master clock at any time.

If the internal clock is programmed as a master, it sends telegrams with the new time and date on the bus, once the time has been set with the help of the application program.



The time switch program is updated by adjusting the clock. Switching operations can be triggered as a result.

A further parameter appears in the selection *Master (send hourly)*.

**Send at**

Options:	Minute	00...59
	Hour	not active

The minute for each full hour is entered with this parameter. The displays for minutes can be edited via the buttons *Left arrow* and *Right arrow*.

**Option: Master (send daily)**

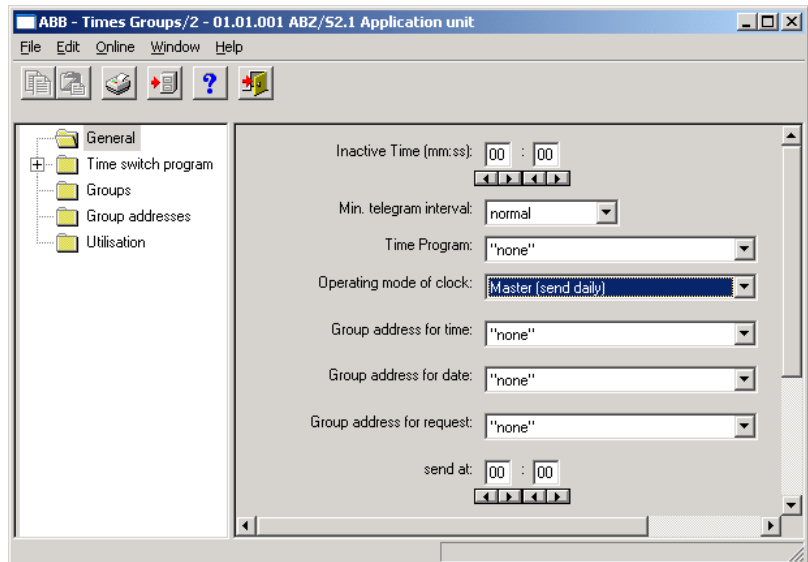


Fig. 43: Parameter window: "General, Operating mode of clock, Master (send daily)"

The internal clock sends telegrams with the time and date once per day e.g. to synchronise other EIB devices. You are requested to enter a time (hour, minute) for sending. The time and date can be queried via communication object no. 250 "Request object".

If a group address has been assigned to the parameter *Group address for request*, the current time and date can be requested from a master clock at any time.

If the internal clock is programmed as a master, it sends telegrams with the new time and date on the bus, once the time has been set with the help of the application program.



The time switch program is updated by adjusting the clock. Switching operations can be triggered as a result.

Further parameters appear in the selection *Master (send daily)*.

**Send at**

Options:	Minute	<u>00</u> ...59
	Hour	<u>00</u> ...23

The minute and the hour can be entered with this parameter. The displays for hours and minutes can be edited separately via the buttons *Left arrow* and *Right arrow*.

### 3.4.2 Time switch program

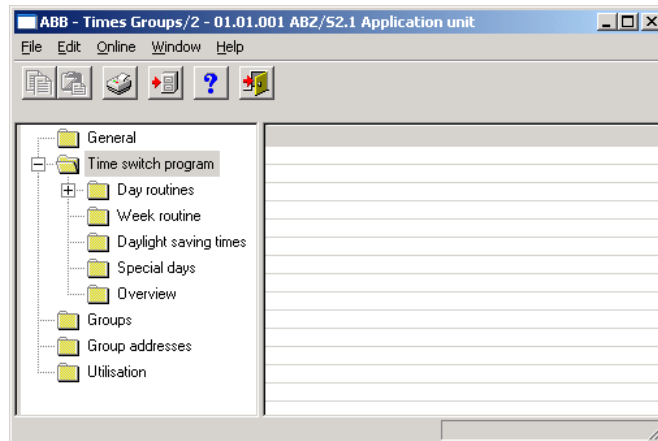


Fig. 44: "Time switch program" screen

#### Method of operation

The time switch program sends telegrams with specific group addresses and values at the parameterised times. Specific functions are thus triggered in the ABB i-bus<sup>®</sup> installation such as switching the lighting in a room on or off.

To do so, day routines i.e. switching programs for specific days can be defined. A week routine with the assignment of day routines to weekdays can also be set.

In the time switch program, you can

- define 15 day routines i.e. 15 different time switch programs for the period between 00:00 and 23:59,
- assign a total of 800 switching times,
- define the week routine i.e. assign a day routine to each day of the week,
- define daylight saving times for 10 years in advance,
- assign 100 individual periods – so-called special days – which deviate from the normal week routine and
- display an overview of the time switch program.

### 3.4.3 Day routines - General

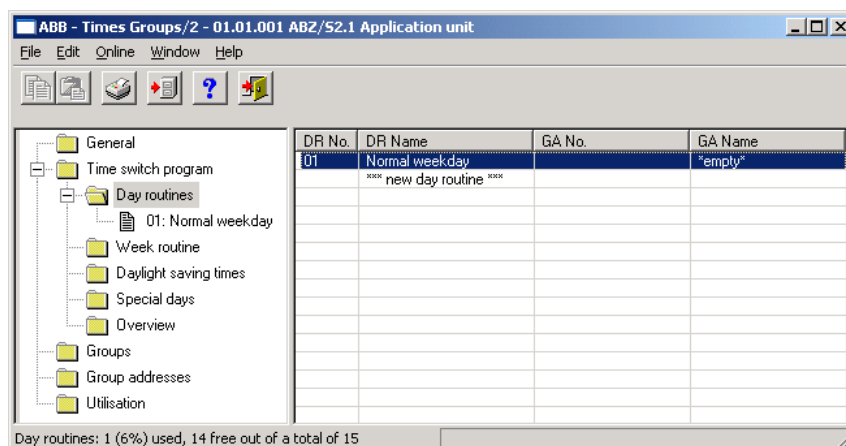


Fig. 45: Dialog window: "Day routines - General"

#### How does a day routine function?

A day routine contains the switching operations of a specific day that are to be carried out e.g. the time switch program of a day between 00:00 and 23:59.

Within a day routine, the first telegram can be sent at 00:00 and the last telegram at 23:59.

Day routines can be activated and/or deactivated by the time switch program and/or by a telegram e.g. by pressing a bus push button.

If a new day routine is activated via a telegram, the current day routine is ended i.e. the Application Unit Time sends a telegram with the group address of the current day routine with the value "0" on the bus. A telegram with the group addresses of the new day routine is then sent with the value "1" on the bus. It is therefore possible to indicate on a display for example which day routine is currently active.

The Application Unit Time then sends telegrams if necessary and establishes precisely the state in the ABB i-bus<sup>®</sup> installation which would have existed if the old day routine had run normally until midnight and the new day routine had started normally at midnight and had been executed until the current time.

If a day routine is activated and the time is put forward, the state that would have existed if the day routine had run normally until the reset time is established in the ABB i-bus<sup>®</sup> installation.

If the time is reset, no telegrams are sent.

If the time is adjusted so that a new day routine is activated, the process as described for changing the day routine is carried out.

3.4.3.1 Insert new day routines

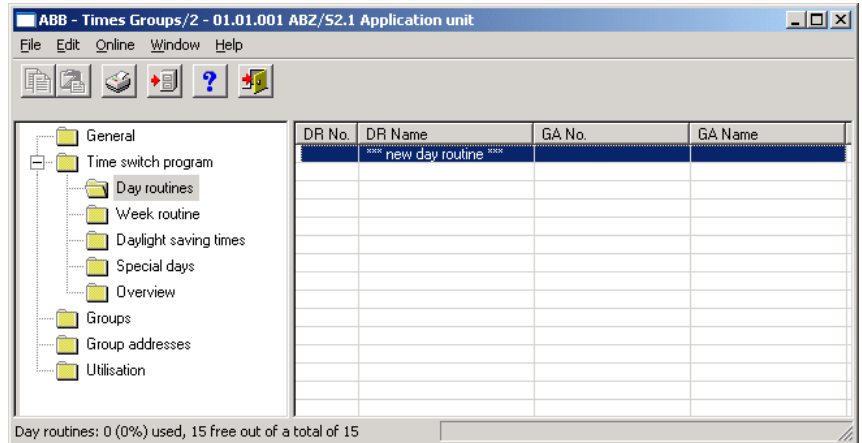


Fig. 46: Dialog window: "Insert new day routines"

To insert a day routine, first select *Time switch program* in the selection area followed by *Day routines*.

The relevant table is activated in the right-hand window.

The table is divided into **DR No.**, **DR Name**, **GA No.** and **GA Name**.

The meaning of the individual columns is as follows:

**DR No., DR Name**

This column displays the consecutive number of the day routine (*DR No.*) and the name of the day routine (*DR Name*).

**GA No., GA Name**

If a telegram is able to activate a day routine, then the associated number (*DR No.*) and the name (*DR Name*) of the group address is displayed which can activate or deactivate this day routine.

**Note:** Day routines can be activated and/or deactivated by the time switch program and/or by a telegram.

The *Day routine* parameter window is activated in the following way:

- by double-clicking on *\*\*\*new day routine\*\*\**, or
- by pressing the right mouse button and selecting *New day routine* in the pop-up menu, or
- by selecting *Edit* in the menu bar and then activating *New day routine* in the pop-up menu.

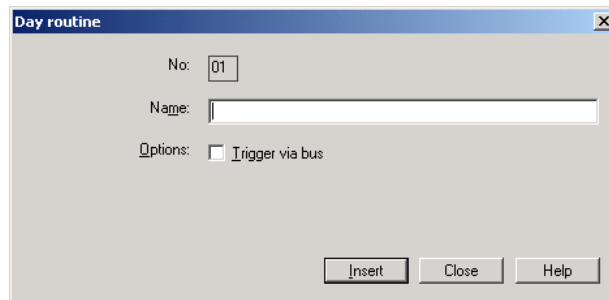


Fig. 47: Parameter window: "Insert new day routine"

### No.

The day routine number (*DR No.*) is automatically assigned by the application program and is a consecutive number for the unique identification of the day routine.

### Name

The name of the day routine (*DR Name*) can be freely selected. The name can e.g. describe which functions are activated by this day routine. A maximum of 50 characters are available.

### Options

If the day routine should not be activated via the time switch program but via a telegram, then activate the tick box *Trigger via bus*.

Note: In this case, a list field appears in which a group address can be inserted.

### "Insert" button

A new day routine is inserted via the *Insert* button.

### "Close" button

The parameter window is closed via the *Close* button.

### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

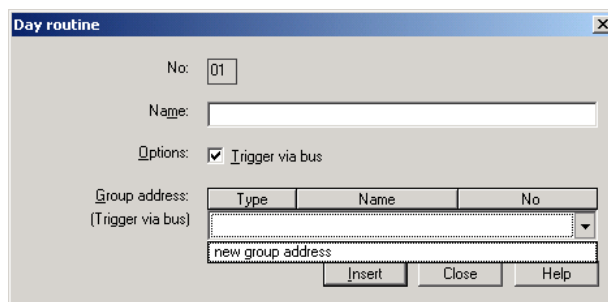


Fig. 48: Parameter window: "Day routine, Select new group address"

### Group address (Trigger via bus)

Option: new group address

The parameter is divided into **Type**, **Name** and **No**. The table can be repositioned and sorted as required.

The meaning of the individual columns is as follows:

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Name

The *name* of the group address is defined during the parameterisation of the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

#### No.

The *number* of the group address is the unique identifier of a group address.



After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

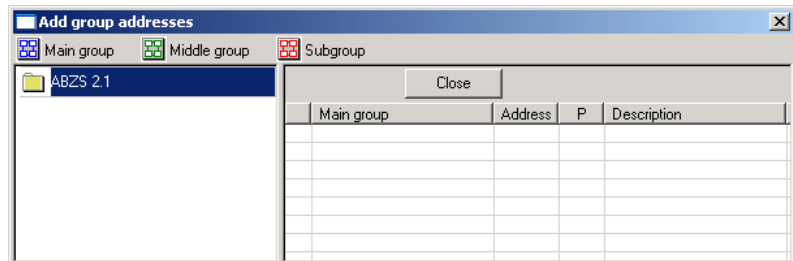


Fig. 49: Dialog window: "Day routine, Add group addresses"

The main group, middle group and the subgroup are created in sequence via drag & drop.

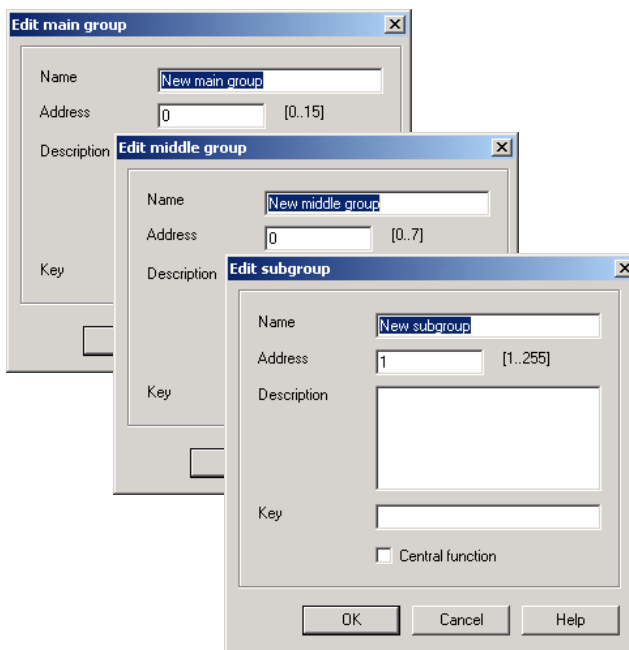


Fig. 50: Parameter window: "Day routine, Create new main group, middle group and subgroup"

**Note:** The function descriptions and screenshots of the application program in this product manual all relate to ETS3. The application program for ETS4 has now become available.

The only difference between both program versions is the number of possible main groups:  
 ETS3 = up to 15 main groups  
 ETS4 = up to 31 main groups

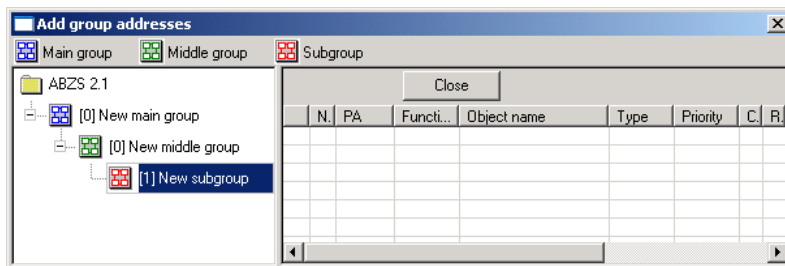


Fig. 51: Dialog window: "Day routine, Main group, middle group and subgroup created"

By marking *New middle group* in the left-hand window, the newly created group address is visible in the right-hand window.

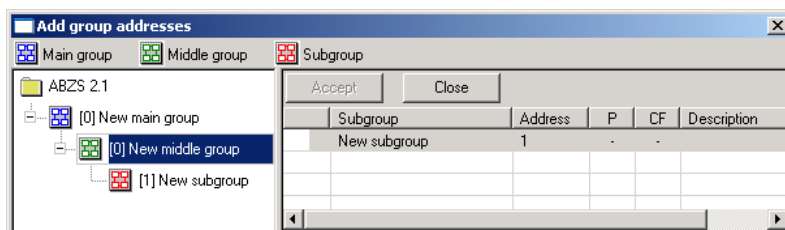


Fig. 52: Dialog window: "Day routine, Middle group marked"

The *Accept* button is activated by clicking on the group address in the right-hand window.

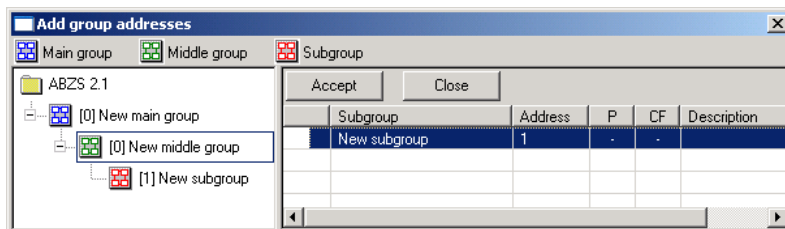


Fig. 53: Dialog window: "Day routine, Subgroup marked"

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

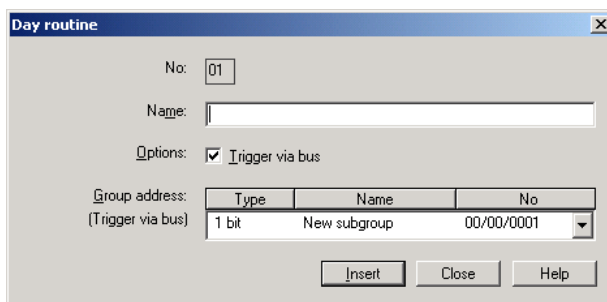


Fig. 54: Parameter window: "Day routine, Group address inserted"

The *new group address* is always of type 1 bit.

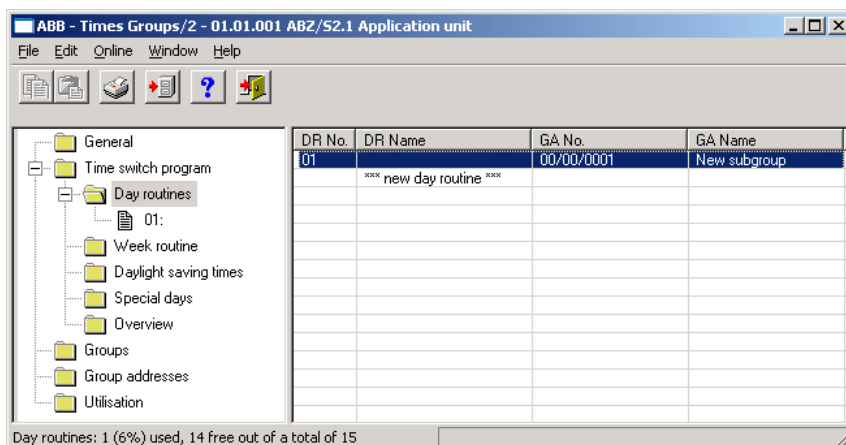


Fig. 55: Dialog window: "Day routine, Group address displayed"

The newly inserted group address is then displayed in the right-hand window under *GA No.* and *GA Name*.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

3.4.3.2 Edit day routines

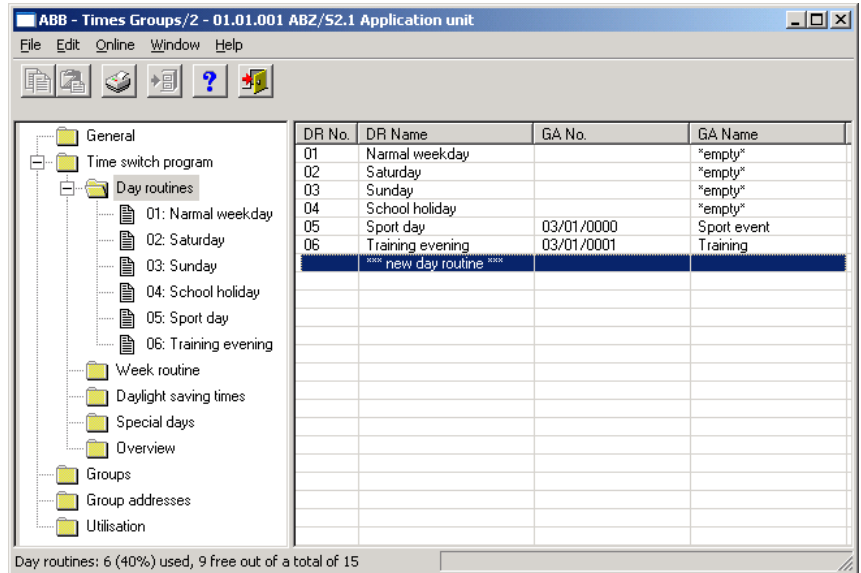


Fig. 56: Dialog window: "Edit day routines"

To edit a day routine, first select *Time switch program* in the selection area followed by *Day routines*.

The associated table is activated in the right-hand window and the day routines that have already been inserted are visible.

The table is divided into **DR No.**, **DR Name**, **GA No.** and **GA Name**.

The meaning of the individual columns is as follows:

**DR No., DR Name**

This column displays the consecutive number of the day routine (*DR No.*) and the name of the day routine (*DR Name*).

**GA No., GA Name**

If a telegram is able to activate a day routine, then the associated number (*DR No.*) and the name (*DR Name*) of the group address is displayed which can activate or deactivate this day routine.

**Note:** Day routines can be activated and/or deactivated by the time switch program and/or a telegram.

The parameter window for the selected day routine is activated in the following way:

- by double-clicking on the selected day routine or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

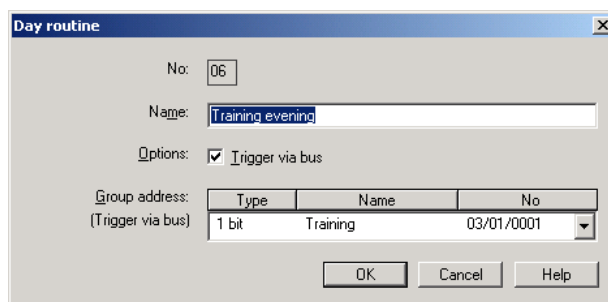


Fig. 57: Parameter window: "Select day routine"

The selected *Day routine* dialog window is now available for editing.

### No.

The day routine number (*DR No.*) cannot be modified. It is automatically assigned by the application program and is a consecutive number for the unique identification of the day routine.

### Name

The day routine name (*DR Name*) can be modified. There are a maximum of 50 characters available.

### Options

The option can be deactivated. The assignment to the created group address is thereby deleted.

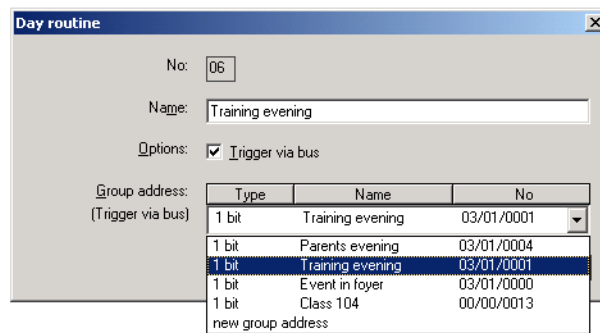


Fig. 58: Parameter window: "Day routine, Select new group address"

**Group address (Trigger via bus)**

Options: existing group address /  
new group address

An *existing group address* can be assigned in the selection list.

The parameter is divided into **Type**, **Name** and **No.** The table can be repositioned and sorted as required.

The meaning of the individual columns is as follows:

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**Name**

The *name* of the group address is defined during the parameterisation of the ABB i-bus® installation and cannot be modified with the parameterisation software PZM2.

**No.**

The *number* of the group address is the unique identifier of a group address.

**“OK” button**

When the “OK” button is pressed, the settings are adopted and the parameter window closes.

**“Cancel” button**

When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

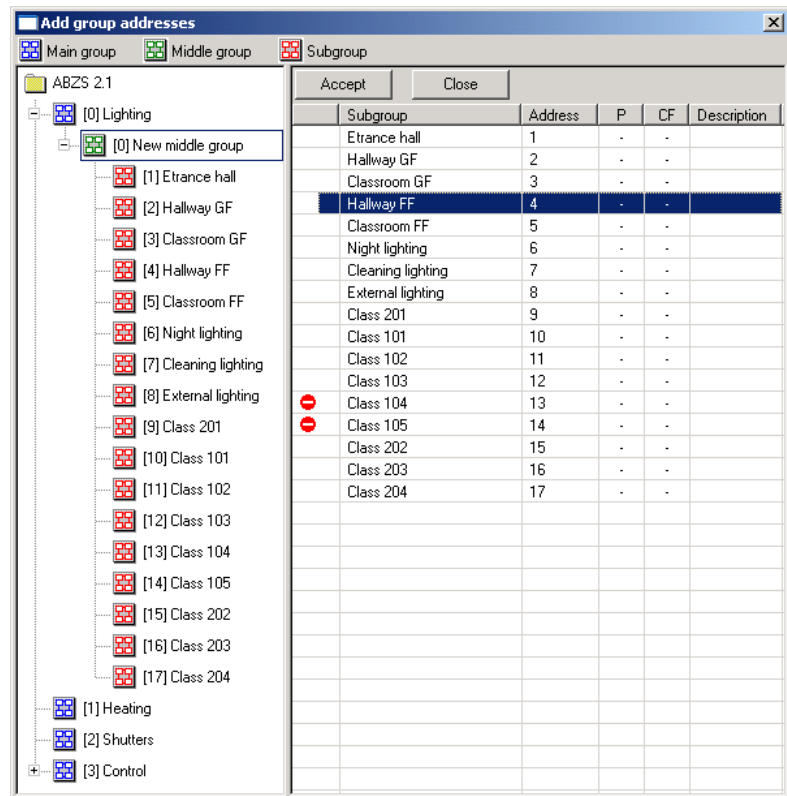


Fig. 59: Dialog window: "Day routine, Select group address"

New group addresses can be created by dragging & dropping main groups, middle groups and subgroups.

The *Accept* button is activated by clicking on the new group address in the right-hand window.

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

The dialog window is closed by pressing the *Accept* button.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

3.4.3.3 Delete day routines

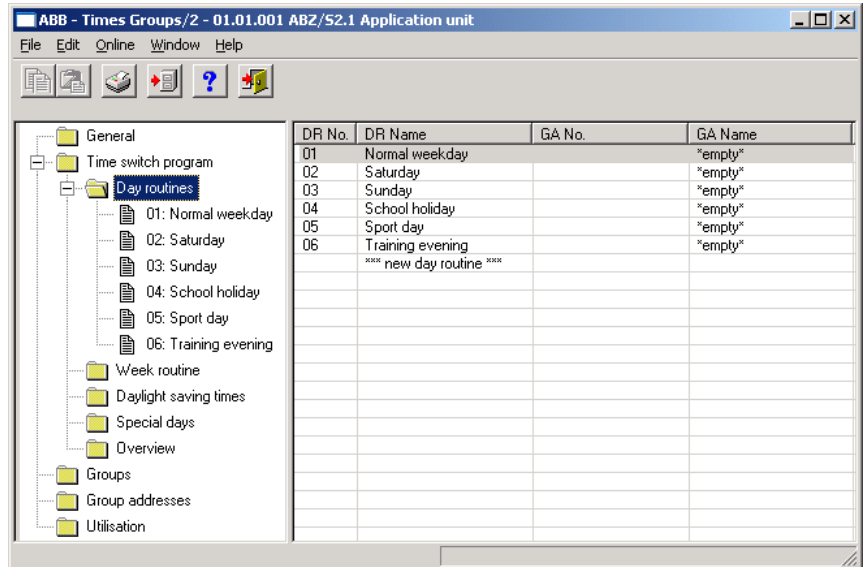


Fig. 60: Dialog window: "Delete day routines"

To delete a day routine, first select *Time switch program* in the selection area followed by *Day routines*.

The associated table is activated in the right-hand window and the day routines that have already been inserted are visible.

The table is divided into **DR No.**, **DR Name**, **GA No.** and **GA Name**.

The meaning of the individual columns is as follows:

**DR No., DR Name**

This column displays the consecutive number of the day routine (*DR No.*) and the name of the day routine (*DR Name*).

**GA No., GA Name**

If a telegram is able to activate a day routine, then the associated number (*DR No.*) and the name (*DR Name*) of the group address is displayed which can activate or deactivate this day routine.

Note: Day routines can be activated and/or deactivated by the time switch program and/or a telegram.



Select the day routine which should be deleted e.g. Training evening.

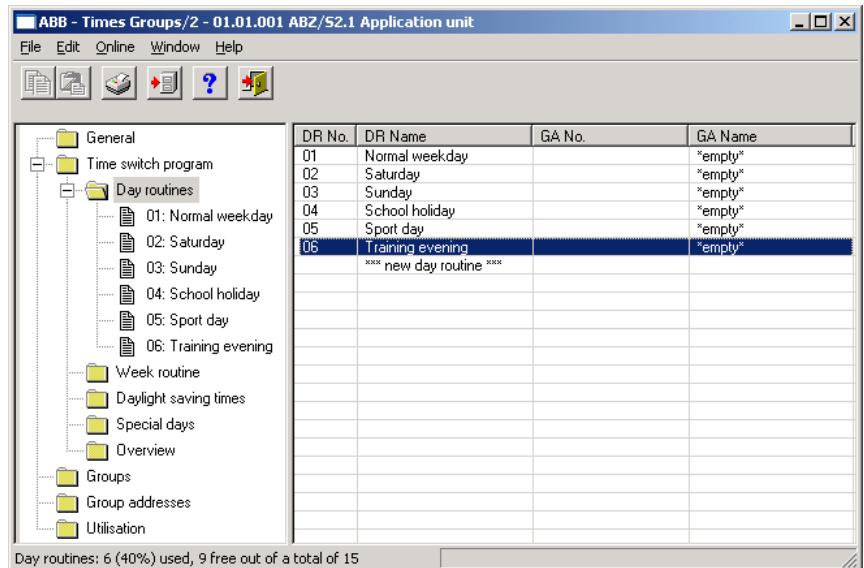


Fig. 61: Dialog window: "Select day routine"

The selected day routine is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu.

**"Yes" button**

Before the day routine can be deleted, a prompt must be confirmed with Yes.



Fig. 62: Parameter window: "Day routine, Prompt"

**"No" button**

If the *No* button is selected, the day routine is not deleted.

**"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

3.4.4 Switching time - General

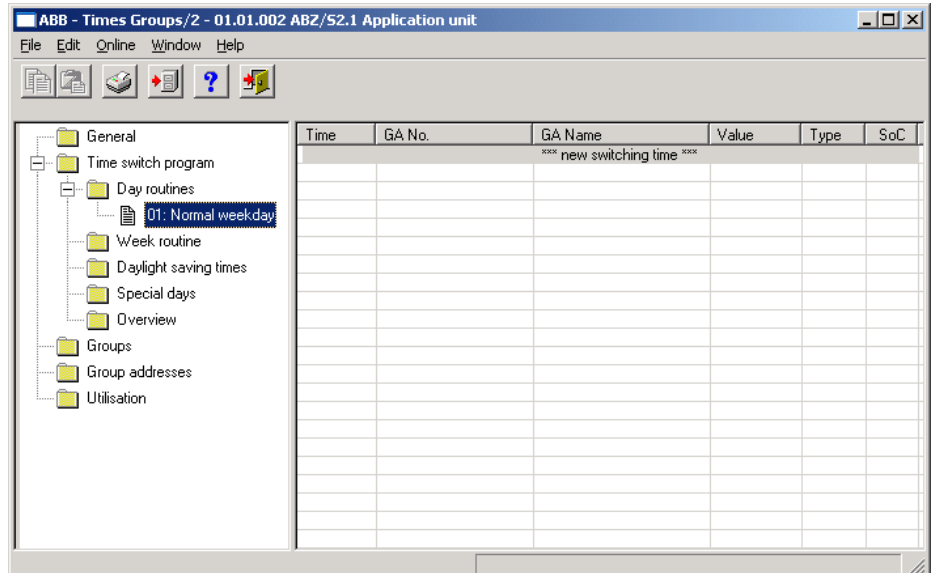


Fig. 63: Dialog window: "Switching time – General"

The interval at which the time switch program of the Application Unit Time sends a telegram with a defined group address and a defined value on the bus, is designated as a switching time.

### 3.4.4.1 Insert new switching time

**Note:** Before a switching time is inserted, a day routine must have been created under *Day routines*.

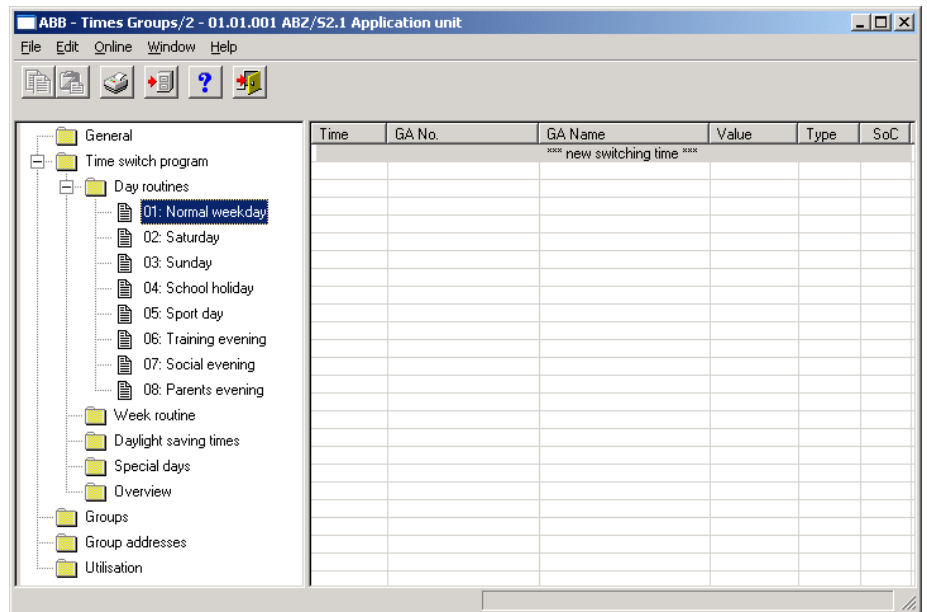


Fig. 64: Dialog window: "Insert switching time"

To insert a switching time, first select *Time switch program*, *Day routines* in the selection area followed by a day routine, e.g. 01: Normal weekday.

The associated table is activated in the right-hand window.

The table is divided into **Time**, **GA No.**, **GA Name**, **Value**, **Type** and **SoC**.

The meaning of the individual columns is as follows:

#### **Time**

This column displays the set switching time at which a telegram is sent.

#### **GA No.**

The *number* of the group address is the unique identifier of a group address.

#### **GA Name**

The *name* of the group address is displayed here.

#### **Value**

This column displays which value is sent with the group address.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

Note: Day routines can be activated and/or deactivated by the time switch program and/or by a telegram.

The parameter window *Switching time for day routine, Normal weekday* is activated in the following way:

- by double-clicking on *\*\*\* new switching time \*\*\** or
- by pressing the right mouse button and selecting *New switching time* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *New switching time* in the pop-up menu.

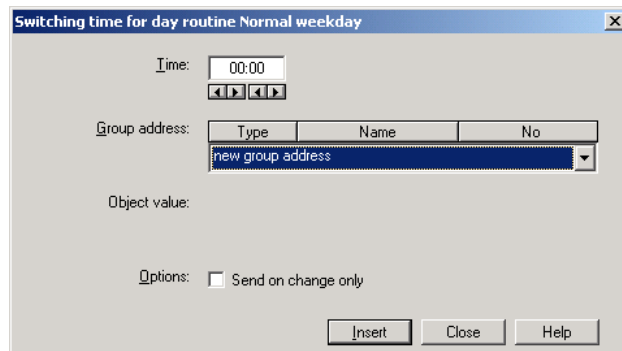


Fig. 65: Parameter window: "Insert new switching time"

### Time

This parameter defines the time at which a telegram is sent, thereby activating a function.

The displays for hours and minutes can be edited separately via the *Left arrow* and *Right arrow* buttons.

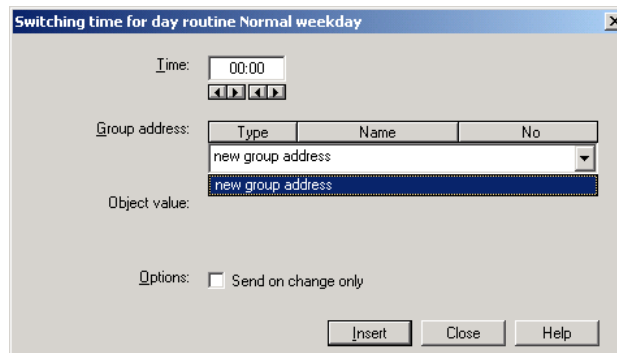


Fig. 66: Parameter window: "Switching time, Select new group address"

### Group address

Option: new group address

The parameter is divided into **Type**, **Name** and **No.** The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Name

The *name* of the group address is defined when configuring the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

#### No.

The *number* of the group address is the unique identifier of a group address.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

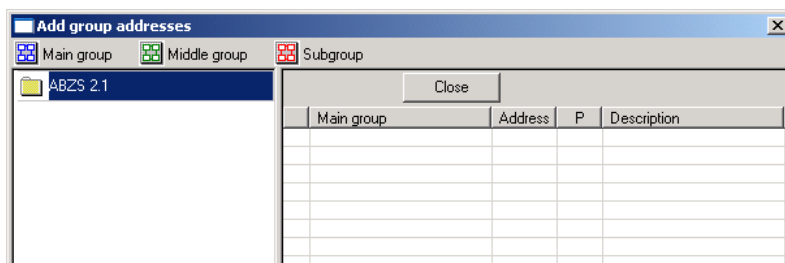


Fig. 67: Dialog window: "Switching time, Add group addresses"

The main group, middle group and the subgroup are created in sequence via drag & drop.

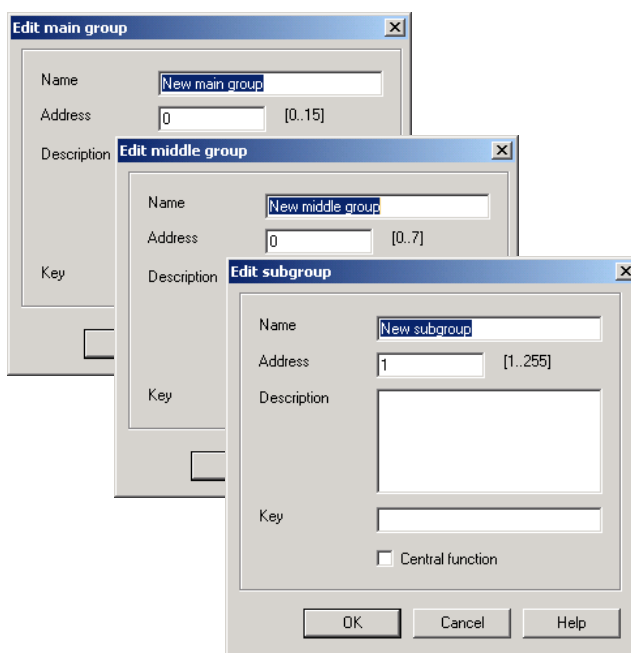


Fig. 68: Parameter window: "Switching time, Create new main group, middle group and subgroup"

**Note:** The function descriptions and screenshots of the application program in this product manual all relate to ETS3. The application program for ETS4 has now become available. The only difference between both program versions is the number of possible main groups:  
 ETS3 = up to 15 main groups  
 ETS4 = up to 31 main groups

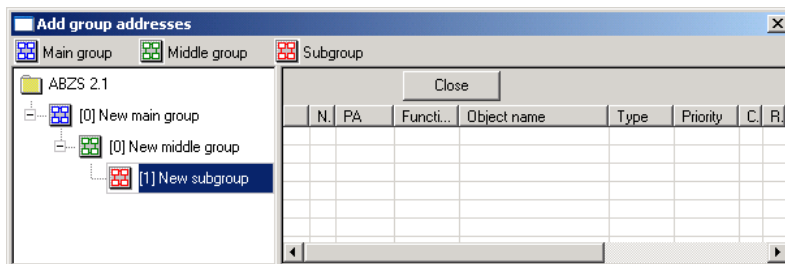


Fig. 69: Parameter window: "Switching time, Main group, middle group and subgroup created"

By marking *New middle group* in the left-hand window, the newly created group address is visible in the right-hand window.

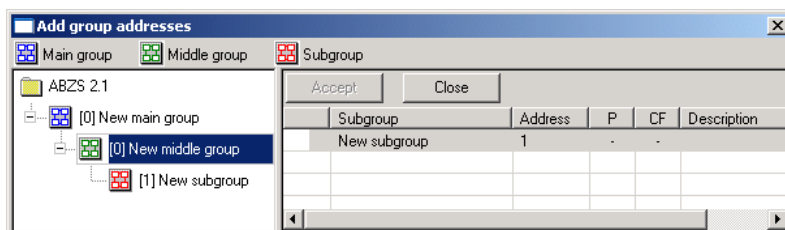


Fig. 70: Dialog window: "Switching time, Middle group marked"

The *Accept* button is activated by clicking on the group address in the right-hand window.

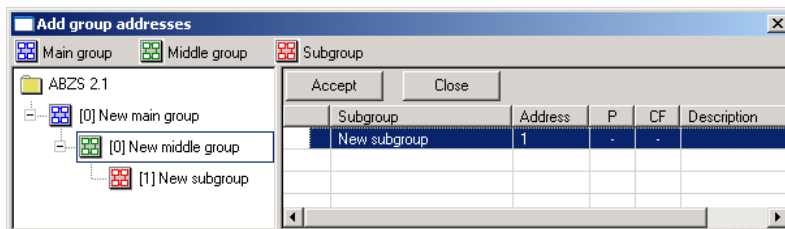


Fig. 71: Dialog window: "Switching time, Subgroup marked"

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.



After pressing the *Accept* button, a further dialog window *Group address* becomes active. The *data type* for the newly created group address is selected in this window.

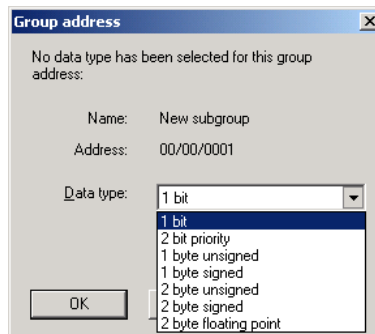


Fig. 72: Parameter window: "Switching time, Select data type"

#### **"OK" button**

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

Note: Different options appear in the *Object value* parameter depending on the type which has been selected for the group address.

**Type 1 bit**

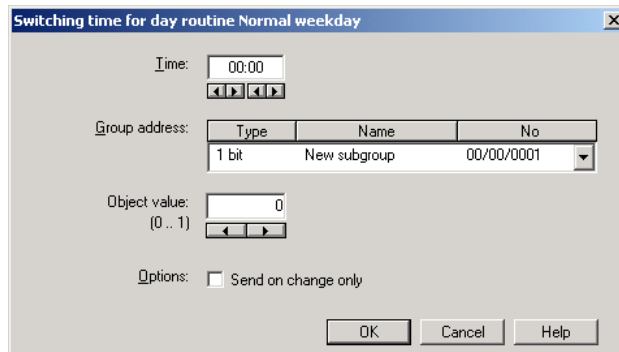


Fig. 73: Parameter window: "Switching time, Data type 1 bit"

**Object value (0...1)**

Options: 0/1

This parameter is used to select which object value is sent.

**Type 2 bit priority**

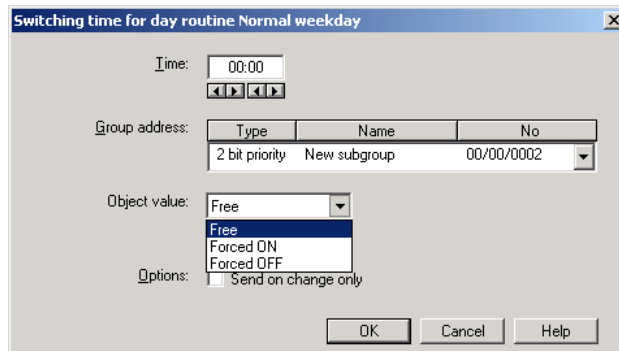


Fig. 74: Parameter window: "Switching time, Data type 2 bit priority"

**Object value**

Options: Free/  
 Forced ON/  
 Forced OFF

This parameter is used to select which object value is sent. The priority control function is explained in the following table:

Bit 1	Bit 0	Access	Description
0	0	Free	The priority object has enabled e.g. the switch actuator. The output switches depending on the value of the switch object.
0	1	Free	
1	0	OFF	The priority object has switched e.g. the switch actuator OFF with priority control. The switch object has no function.
1	1	ON	The priority object has switched e.g. the switch actuator ON with priority control. The switch object has no function.

Table 4: Priority object

**Note:** 4 different values can be sent with the telegram. So-called priority objects can thus be addressed in the EIB devices. If a channel e.g. in a switch actuator should switch on or off, the value 1 or 0 is sent to the assigned switch object. If a priority object is also assigned to this channel, the value that was sent to the priority object defines the behaviour of the channel.

**Type 1 byte unsigned (0...255)**

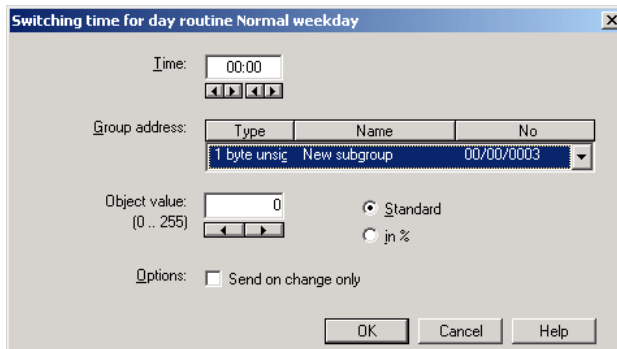


Fig. 75: Parameter window: "Switching time, Data type 1 byte unsigned (0...255)"

**Object value (0...255) and Standard**

Options: 0...255

This parameter is used to select which object value is sent.

If *Standard* is also selected, the object value is issued without a unit of measurement.

**Type 1 byte unsigned (0...100%)**

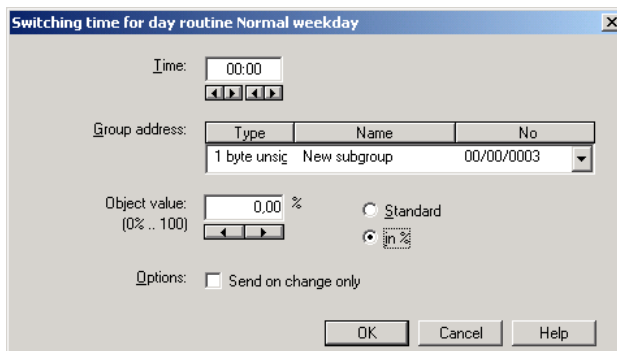


Fig. 76: Parameter window: "Switching time, Data type 1 byte unsigned (0...100%)"

**Object value (0...100%) and in %**

Options: 0,00...100%

This parameter is used to select which object value is sent.

If the option *in %* is also selected, 0 = 0% and 255 = 100% are assigned to the object values.

**Type 1 byte signed (-128...127)**

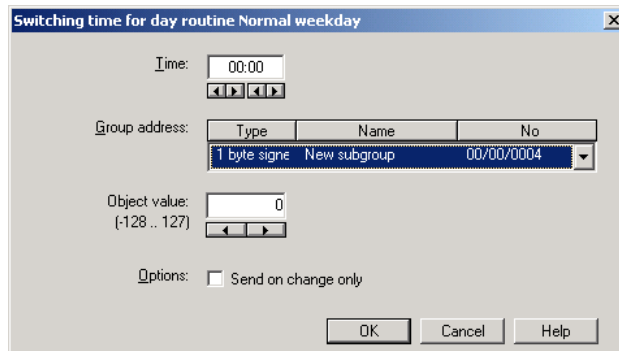


Fig. 77: Parameter window: "Switching time, Data type 1 byte signed (-128...127)"

**Object value (-128...127)**

Options: -128...0...127

This parameter is used to select which object value is sent.

**Type 2 byte unsigned (0...65,535)**

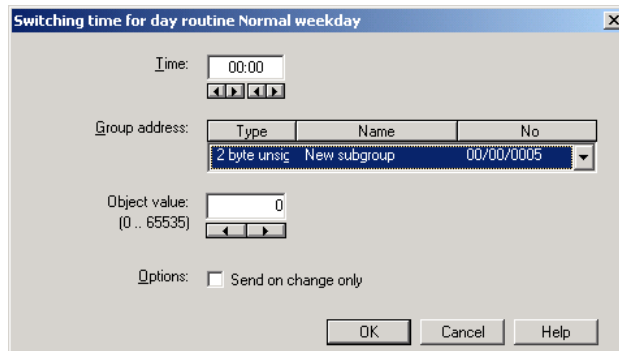


Fig. 78: Parameter window: "Switching time, Data type 2 byte unsigned (0...65,535)"

**Object value (0...65,535)**

Options: 0...65,535

This parameter is used to select which object value is sent.

**Type 2 byte signed (-32,768...32,767)**

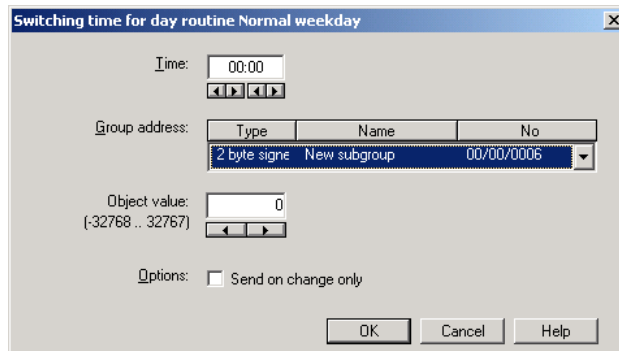


Fig. 79: Parameter window: "Switching time, Data type 2 byte signed (-32,768...32,767)"

**Object value (-32,768...32,767)**

Options: -32,768...0...32,767

This parameter is used to select which object value is sent.

**Type 2 byte floating point**

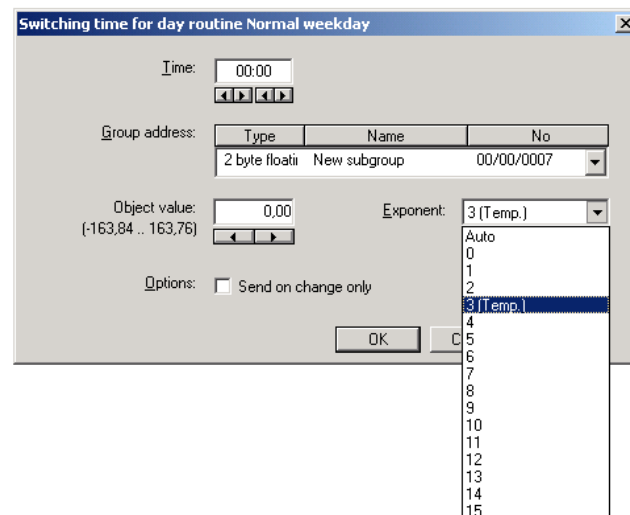


Fig. 80: Parameter window: "Switching time, Data type 2 byte floating point"

**Object value (-163.84...163.76) and Exponent 3 (Temp.)**

Options: -163.84...0...163.76

This parameter is used to select which object value is sent.

**Exponent**

Options:            Auto /  
                         0...3 (Temp.)...15

This parameter is used to select which exponent is assigned to the object value.

Note:                Different object values can be set, depending on the exponent which is selected. The table below shows all the options.

Exponent	Object value
Auto	-671,088.64...0.00...670,760.96
0	-20.48...0.00...20.47
1	-40.96...0.00...40.94
2	-81.92...0.00...81.88
3 (Temp.)	-163.84...0.00...163.76
4	-327.68...0.00...327.52
5	-655.36...0.00...655.04
6	-1,310.72...0.00...1,310.08
7	-2,621.44...0.00...2,620.16
8	-5,242.88...0.00...5,240.32
9	-10,485.76...0.00...10,480.64
10	-20,971.52...0.00...20,961.28
11	-41,943.04...0.00...41,922.56
12	-88,386.08...0.00...83,845.12
13	-167,772.16...0.00...167,690.24
14	-335,544.32...0.00...335,380.48
15	-671,088.64...0.00...670,760.96

Table 5:        Exponent

**Options**

With the option *Send on change only*, it is defined that a telegram is only sent if the value differs from the value that was last sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

If the option *Send on change only* is not selected, the group address and the object value are sent at the set time.

**“OK” button**

A new switching time is inserted via the *OK* button.

**“Close” button**

The parameter window is closed via the *Close* button.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.



## 3.4.4.2 Edit switching time

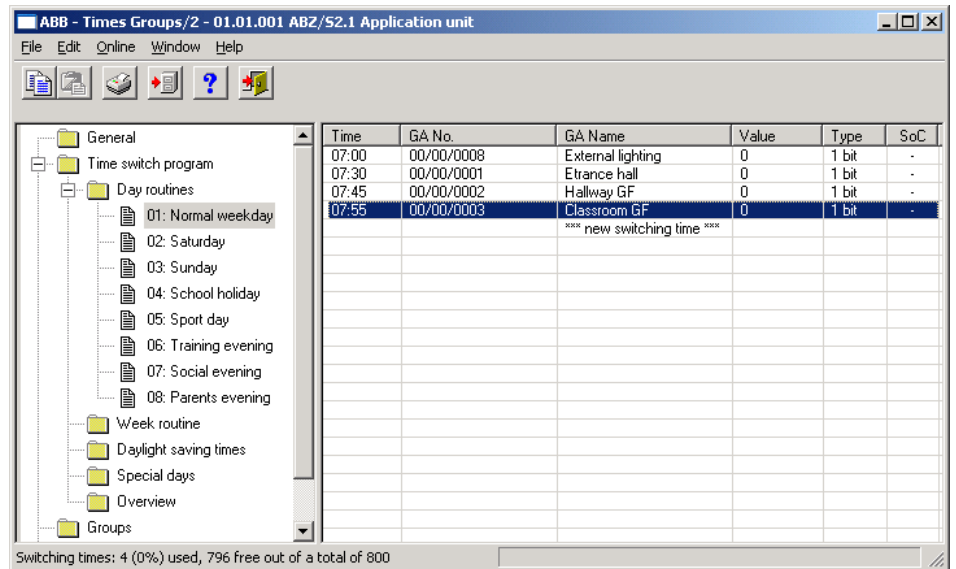


Fig. 81: Dialog window: "Edit switching time"

To edit a switching time, first select *Time switch program*, *Day routines* in the selection area followed by a specific day routine e.g. 7:55.

The associated table is activated in the right-hand window and the already inserted switching times are visible.

The table is divided into **Time**, **GA No.**, **GA Name**, **Value**, **Type** and **SoC**.

The meaning of the individual columns is as follows:

#### Time

This column displays the set switching time at which a telegram is sent.

#### GA No.

The *number* of the group address is the unique identifier of a group address.

#### GA Name

The *name* of the group address is displayed here.

#### Value

This column displays which value is sent with the group address.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

The parameter window *Switching time for day routine – Normal weekday* is activated in the following way:

- by double-clicking on the selected switching time or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

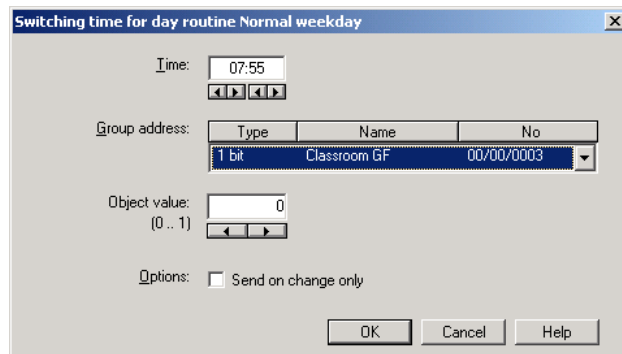


Fig. 82: Parameter window: "Select switching time"

### Time

The time can be edited e.g. via the *Left arrow* and *Right arrow* buttons.

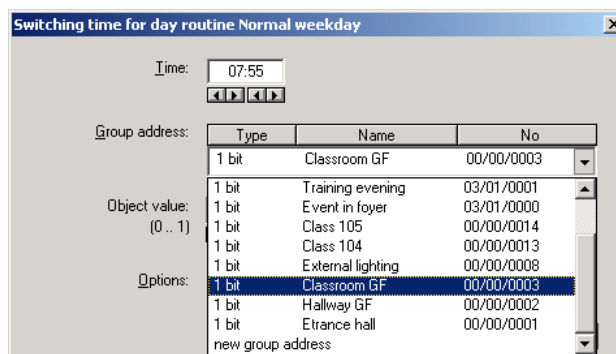


Fig. 83: Parameter window: "Switching time for day routine - Normal weekday, Select group address"

### Group address

Options: existing group addresses /  
new group address

An *existing group address* can be assigned in the selection list.

The parameter is divided into **Type**, **Name** and **No**. The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

### Type

The *type* indicates which type of values a telegram with this group address can send.

### Name

The *name* of the group address is defined when configuring the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

### No.

The *number* of the group address is the unique identifier of a group address.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

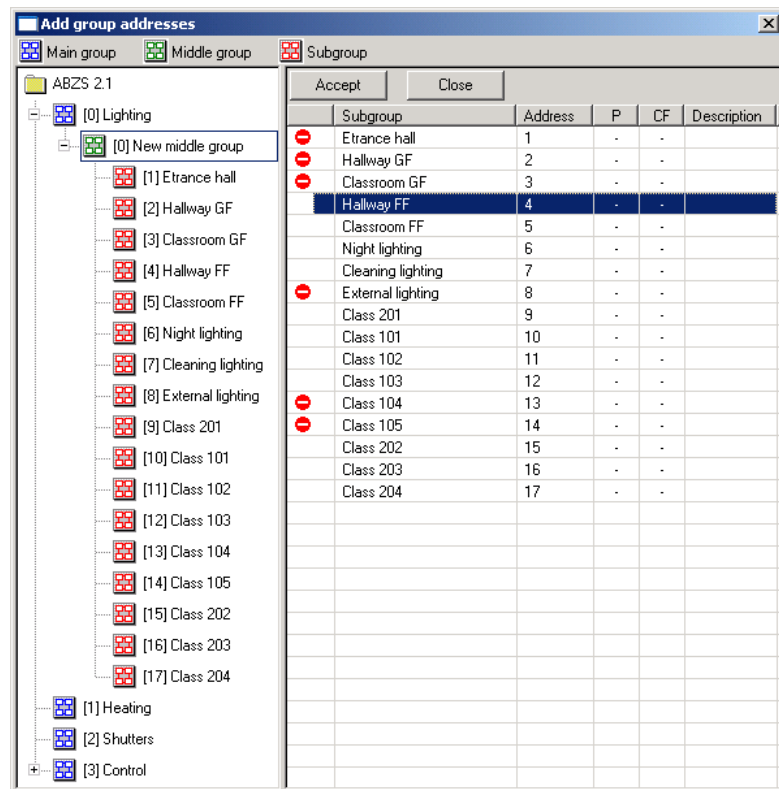


Fig. 84: Dialog window: "Switching time, Select group address"

New group addresses can be created by dragging & dropping main groups, middle groups and subgroups.

The *Accept* button is activated by clicking on the new group address in the right-hand window.

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

After pressing the *Accept* button, a further dialog window *Group address* becomes active. The *data type* for the newly created group address is selected in this window.

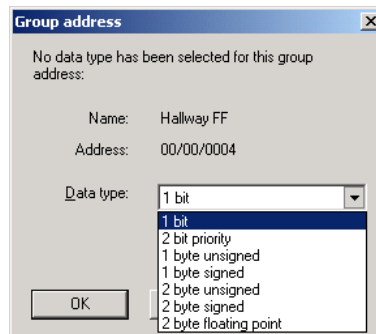


Fig. 85: Parameter window: "Switching time, Select data type"

#### **"OK" button**

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

Note: Different options appear in the *Object value* parameter depending on the type which has been selected for the group address.

**Type 1 bit**

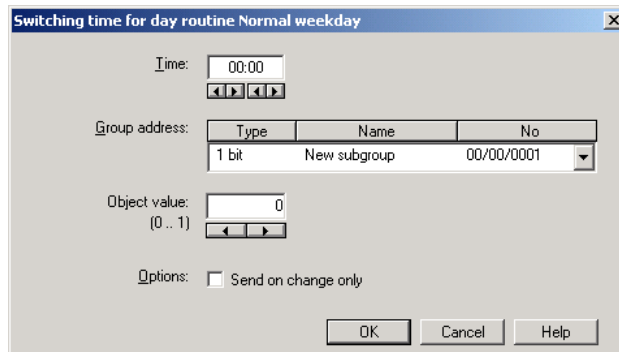


Fig. 86: Parameter window: "Switching time, Data type 1 bit"

**Object value (0...1)**

Options: 0/1

This parameter is used to select which object value is sent.

**Type 2 bit priority**

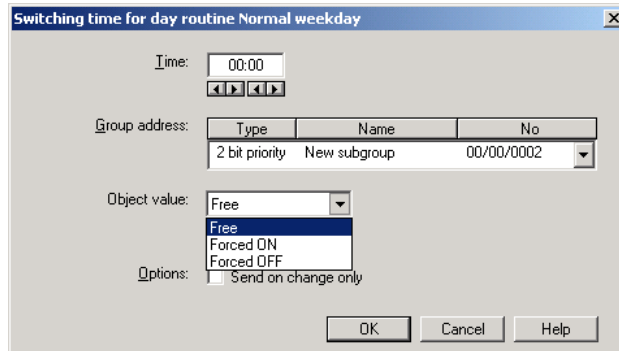


Fig. 87: Parameter window: "Switching time, Data type 2 bit priority"

**Object value**

Options: Free/  
 Forced ON/  
 Forced OFF

This parameter is used to select which object value is sent. The priority control function is explained in the following table:

Bit 1	Bit 0	Access	Description
0	0	Free	The priority object has enabled e.g. the switch actuator. The output switches depending on the value of the switch object.
0	1	Free	
1	0	OFF	The priority object has switched e.g. the switch actuator OFF with priority control. The switch object has no function.
1	1	ON	The priority object has switched e.g. the switch actuator ON with priority control. The switch object has no function.

Table 6: Priority object

**Note:** 4 different values can be sent with the telegram. So-called priority objects can thus be addressed in the EIB devices. If a channel e.g. in a switch actuator should switch on or off, the value 1 or 0 is sent to the assigned switch object. If a priority object is also assigned to this channel, the value that was sent to the priority object defines the behaviour of the channel.



**Type 1 byte unsigned (0...255)**

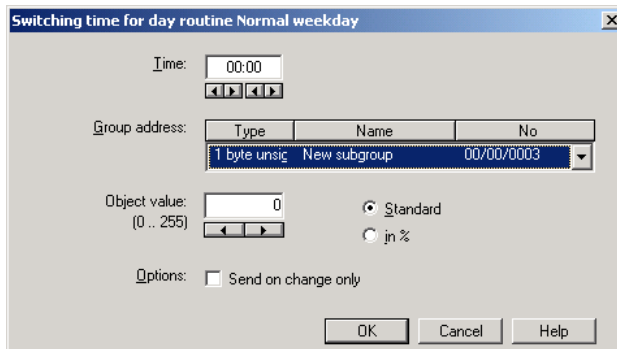


Fig. 88: Parameter window: "Switching time, Data type 1 byte unsigned (0...255)"

**Object value (0...255) and Standard**

Options: 0...255

This parameter is used to select which object value is sent.

If *Standard* is also selected, the object value is issued without a unit of measurement.

**Type 1 byte unsigned (0...100%)**

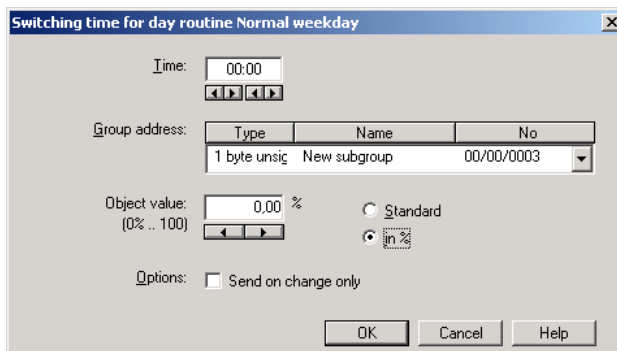


Fig. 89: Parameter window: "Switching time, Data type 1 byte unsigned (0...100%)"

**Object value (0...100%) and in %**

Options: 0,00...100%

This parameter is used to select which object value is sent.

If the option *in %* is also selected, 0 = 0% and 255 = 100% are assigned to the object values.

**Type 1 byte signed (-128...127)**

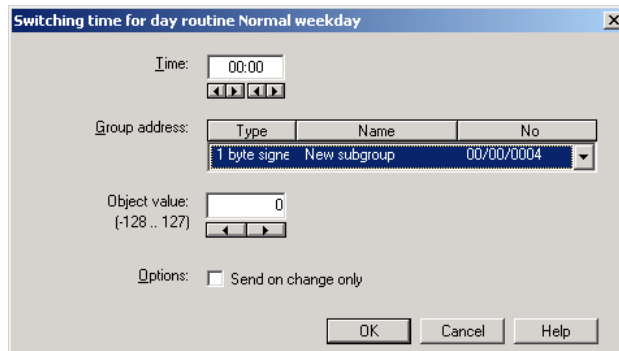


Fig. 90: Parameter window: "Switching time, Data type 1 byte signed (-128...127)"

**Object value (-128...127)**

Options: -128...0...127

This parameter is used to select which object value is sent.

**Type 2 byte unsigned (0...65,535)**

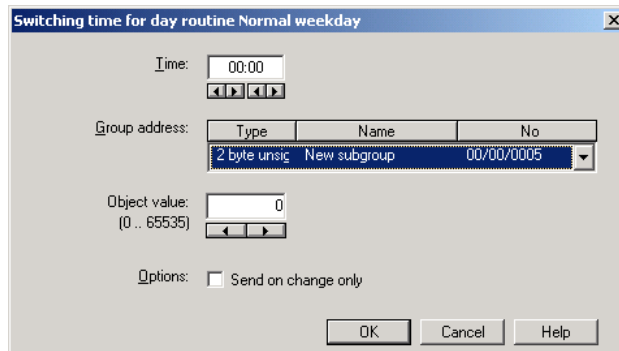


Fig. 91: Parameter window: "Switching time, Data type 2 byte unsigned (0...65,535)"

**Object value (0...65,535)**

Options: 0...65,535

This parameter is used to select which object value is sent.

**Type 2 byte signed (-32,768...32,767)**

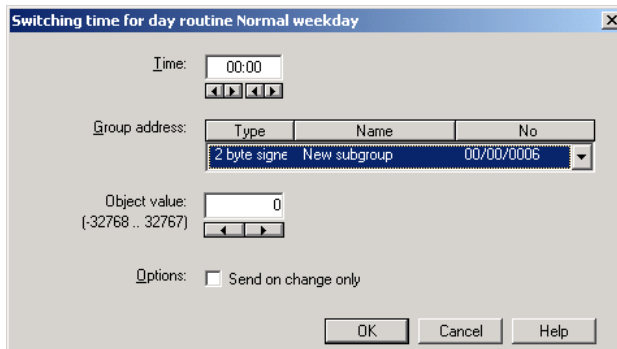


Fig. 92: Parameter window: "Switching time, Data type 2 byte signed (-32,768...32,767)"

**Object value (-32,768...32,767)**

Options: -32,768...0...32,767

This parameter is used to select which object value is sent.

**Type 2 byte floating point**

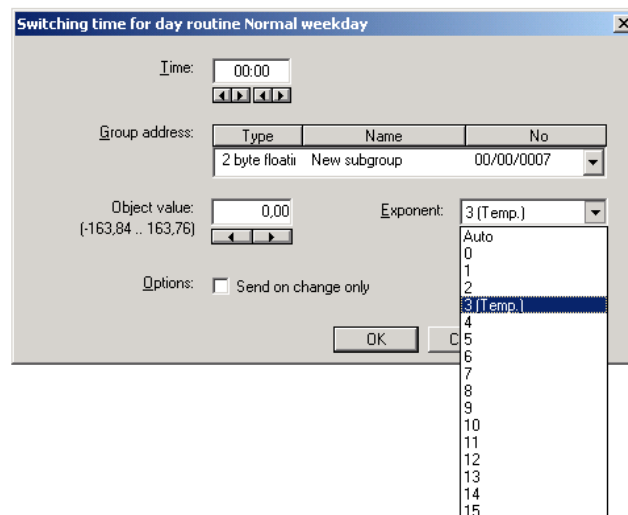


Fig. 93: Parameter window: "Switching time, Data type 2 byte floating point"

**Object value (-163.84...163.76) and Exponent 3 (Temp.)**

Options: -163.84...0...163.76

This parameter is used to select which object value is sent.

**Exponent**

Options:            Auto /  
                         0...3 (Temp.)...15

This parameter is used to select which exponent is assigned to the object value.

Note:                Different object values can be set, depending on the exponent which is selected. The table below shows all the options.

Exponent	Object value
Auto	-671,088.64...0.00...670,760.96
0	-20.48...0.00...20.47
1	-40.96...0.00...40.94
2	-81.92...0.00...81.88
3 (Temp.)	-163.84...0.00...163.76
4	-327.68...0.00...327.52
5	-655.36...0.00...655.04
6	-1,310.72...0.00...1,310.08
7	-2,621.44...0.00...2,620.16
8	-5,242.88...0.00...5,240.32
9	-10,485.76...0.00...10,480.64
10	-20,971.52...0.00...20,961.28
11	-41,943.04...0.00...41,922.56
12	-88,386.08...0.00...83,845.12
13	-167,772.16...0.00...167,690.24
14	-335,544.32...0.00...335,380.48
15	-671,088.64...0.00...670,760.96

Table 7:            Exponent

**Options**

With the option *Send on change only*, it is defined that a telegram is only sent if the value differs from the value that was last sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

If the option *Send on change only* is not selected, the group address and the object value are sent at the set time.

**“OK” button**

When the “OK” button is pressed, the settings are adopted and the parameter window closes.

**“Cancel” button**

When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

3.4.4.3 Delete switching time

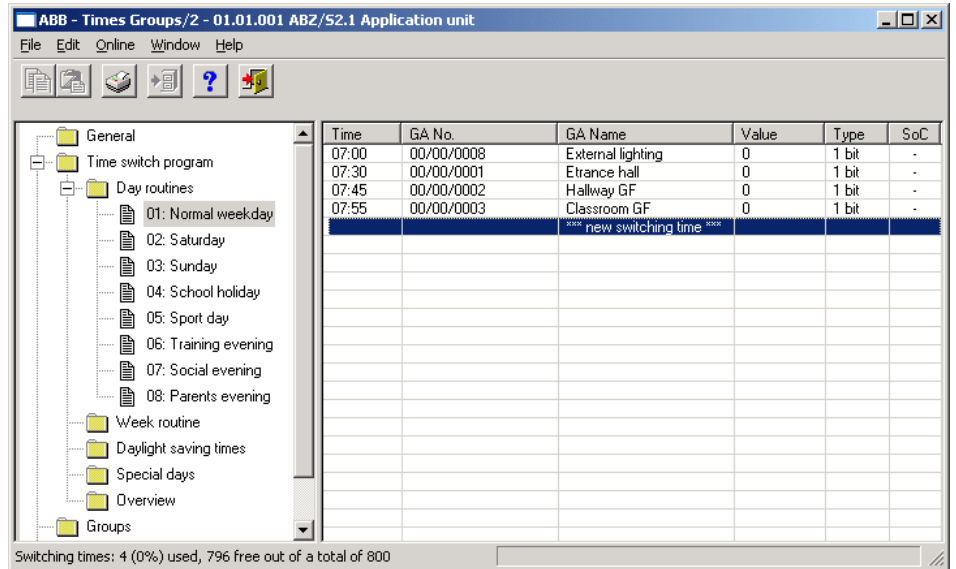


Fig. 94: Dialog window: "Delete switching time"

To delete a switching time, first select *Time switch program*, *Day routines* in the selection area followed by a specific day routine.

The associated window is activated in the right-hand window and the switching times that have already been inserted are visible.

The table is divided into **Time**, **GA No.**, **GA Name**, **Value**, **Type** and **SoC**.

The meaning of the individual columns is as follows:

**Time**

This column displays the set switching time at which a telegram is sent.

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Value**

This column displays which value is sent with the group address.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

Note: Day routines can be activated and/or deactivated by the time switch program and/or by a telegram.

Select the switching time which should be deleted e.g. Classroom GF.

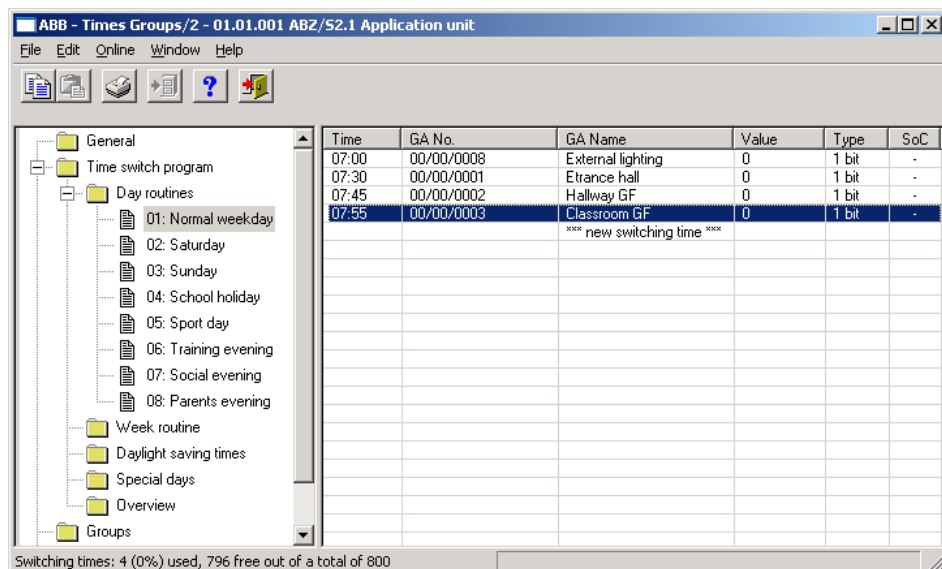


Fig. 95: Dialog window: "Select switching time"

The selected switching time is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu.

#### "Yes" button

Before the switching time can be deleted, a prompt must be confirmed with Yes.

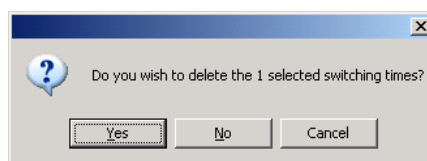


Fig. 96: Parameter window: "Switching time, Prompt"

#### "No" button

If the *No* button is selected, the switching time is not deleted.

#### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.



## 3.4.4.4 Copy/insert switching time

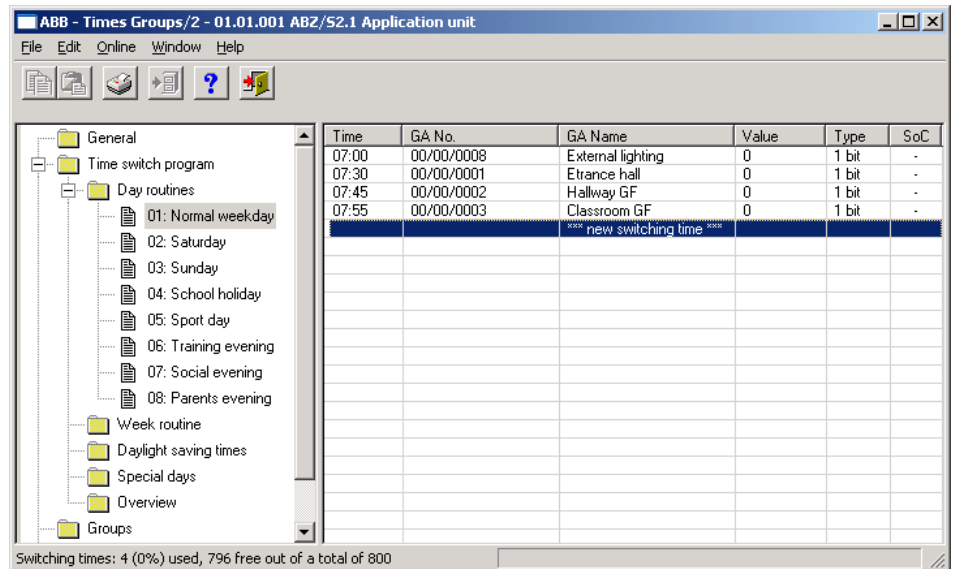


Fig. 97: Parameter window: "Copy/insert switching time"

To copy or insert a switching time, first select *Time switch program*, *Day routines* in the selection area followed by a specific day routine. The associated window is activated in the right-hand window and the switching times that have already been inserted are visible.

The table is divided into **Time**, **GA No.**, **GA Name**, **Value**, **Type** and **SoC**.

The meaning of the individual columns is as follows:

**Time**

This column displays the set switching time at which a telegram is sent.

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Value**

This column displays which value is sent with the group address.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

Note: Day routines can be activated and/or deactivated by the time switch program and/or by a telegram.

Select the switching time which should be copied e.g. Classroom GF.

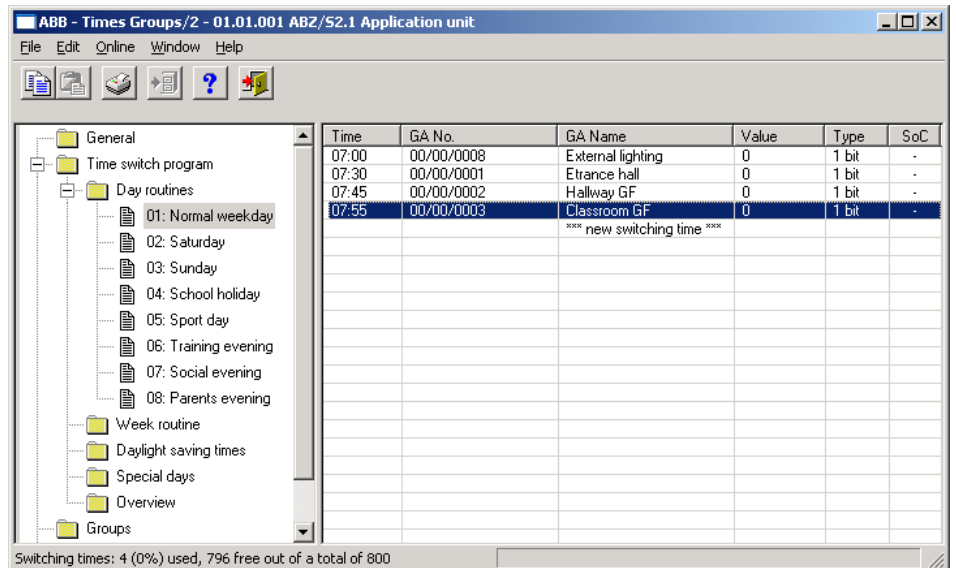




Fig. 98: Dialog window: "Select switching time"

The selected switching time is copied in the following way:

- by pressing the  button or
- by pressing the right mouse button and selecting *Copy* in the pop-up menu.

The switching time which should be copied is inserted in the following way:

- by pressing the  button or
- by pressing the right mouse button and selecting *Insert* in the pop-up menu.

Before the switching time can be inserted, a new switching time must be entered.

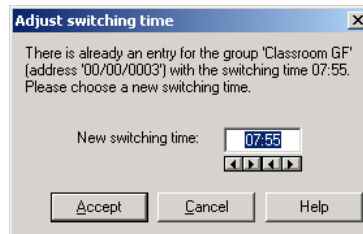


Fig. 99: Parameter window: "Set switching time"

#### **"Accept" button**

When this button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

3.4.5 Week routine - General

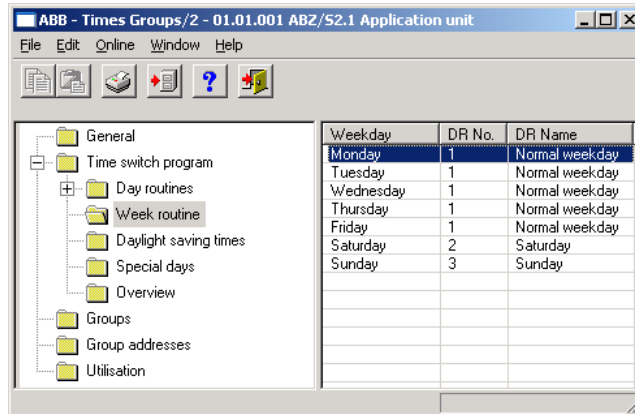


Fig. 100: Dialog window: "Week routine - General"

The week routine is compiled from the day routines. A day routine can be assigned to each day of the week (Monday to Sunday).

### 3.4.5.1 Insert new week routine

**Note:** Before a week routine is inserted, a day routine and a switching time must have been created under *Day routines*.

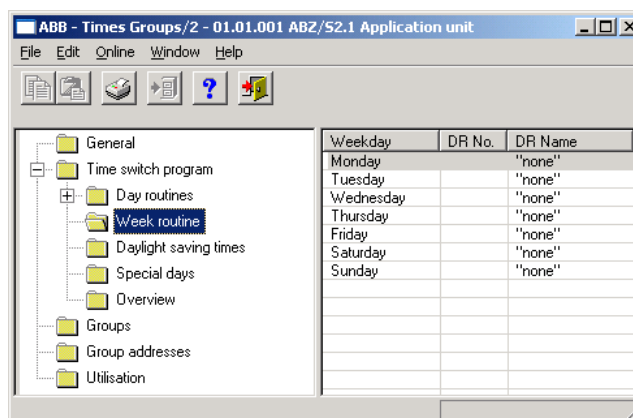


Fig. 101: Dialog window: "Insert week routine"

To insert a week routine, first select *Time switch program* in the selection area followed by *Week routine*.

The associated table is activated in the right-hand window.

The table is divided into **Weekday**, **DR No.** and **DR Name**.

The meaning of the individual columns is as follows:

#### **Weekday**

All the days of the week are automatically displayed in this column.

#### **DR No., DR Name**

This column displays the consecutive numbers of the day routines (*DR No.*) and the names of the day routines (*DR Name*).

**Note:** If no day routines have yet been assigned to a weekday, there is no day routine number (*DR No.*) and "none" is entered as the name of the day routine (*DR Name*).

The parameter window *Standard day routine for Monday* is activated in the following way:

- by double-clicking on the selected weekday or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

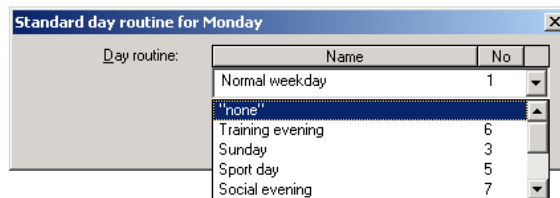


Fig. 102: Parameter window: "Standard day routine for Monday, Insert day routine"

### Day routine

Options: none /  
existing day routines

An *existing day routine* can be assigned in the selection list.

The parameter is divided into **Name** and **No.** The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

#### Name

This column displays the name of the day routine (*DR Name*).

#### No.

This column displays the consecutive number of the day routine (*DR No.*).

#### "OK" button

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

## 3.4.5.2 Edit week routine

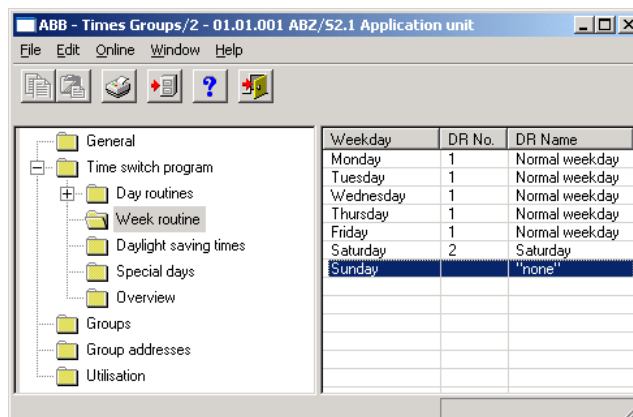


Fig. 103: Dialog window: "Edit week routine"

To edit a week routine, first select *Time switch program* in the selection area followed by *Week routine* e.g. Sunday.

The associated table is activated in the right-hand window.

The table is divided into **Weekday**, **DR No.** and **DR Name**.

The meaning of the individual columns is as follows:

#### Weekday

The weekdays that have been created are displayed in this column.

#### DR No., DR Name

This column displays the consecutive numbers of the day routines (*DR No.*) and the names of the day routines (*DR Name*).

**Note:** If no day routines have yet been assigned to a day of the week, no day routine number (*DR No.*) is displayed and "none" is entered as the name of the day routine (*DR Name*).



The parameter window *Standard day routine for Sunday* is activated in the following way:

- by double-clicking on the selected weekday or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

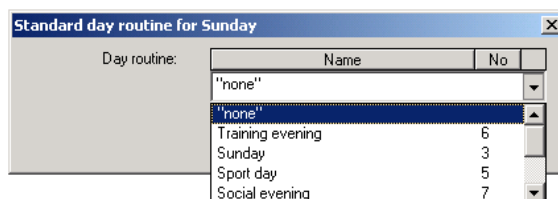


Fig. 104: Parameter window: "Standard day routine for Sunday, Insert day routine"

### Day routine

Select the day routine from the list field which you wish to assign to the day of the week.

### "OK" button

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

## 3.4.5.3 Delete week routine

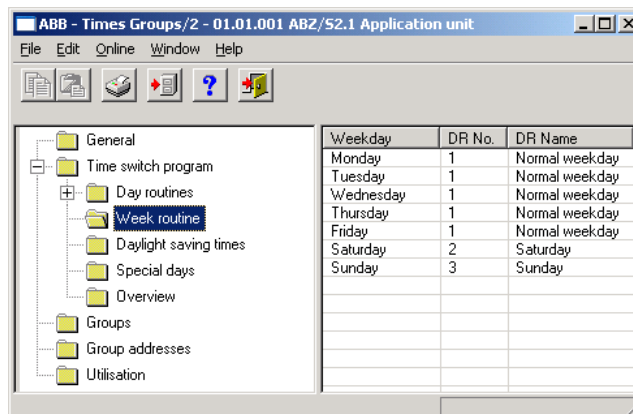


Fig. 105: Dialog window: "Delete week routine"

To delete a week routine, first select *Time switch program* in the selection area followed by *Week routine*.

The associated table is activated in the right-hand window.

The table is divided into **Weekday**, **DR No.** and **DR Name**.

The meaning of the individual columns is as follows:

#### Weekday

This column displays the weekdays that have been created.

#### DR No., DR Name

This column displays the consecutive numbers of the day routines (*DR No.*) and the names of the day routines (*DR Name*).

**Note:** If no day routines have yet been assigned to a day of the week, no day routine number (*DR No.*) is displayed and "none" is entered as the name of the day routine (*DR Name*).

Select the weekday for the day routine that is to be deleted e.g. Monday.

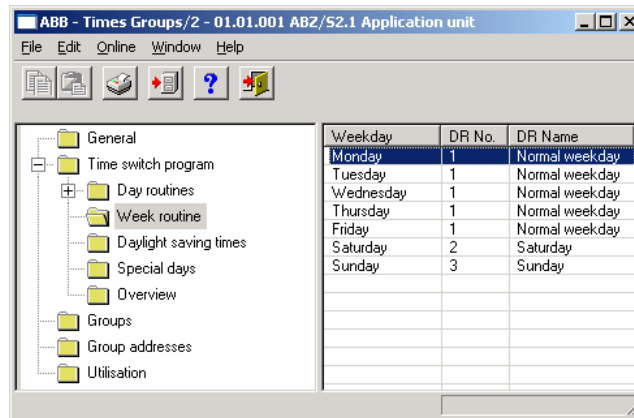


Fig. 106: Dialog window: "Select week routine"

The selected day routine (*DR Name*) is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *Delete* in the pop-up menu.

After carrying out the process described above, "none" is automatically entered under the column *DR Name* i.e. the day routine is deleted.

3.4.6 Daylight saving times - General

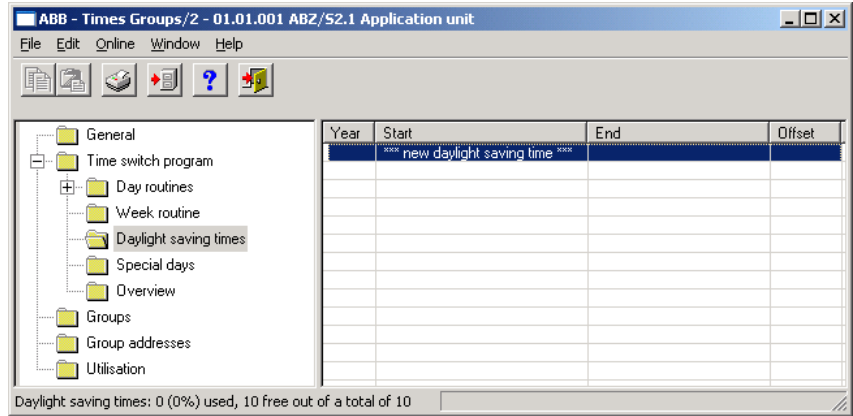


Fig. 107: Dialog window: "Daylight saving times - General"

With this function, the changeover days, the changeover times and the offset for daylight saving can be calculated or defined.

Note: The basis for calculating the daylight saving times is the provision of your PC equipment.

### 3.4.6.1 Insert new daylight saving time

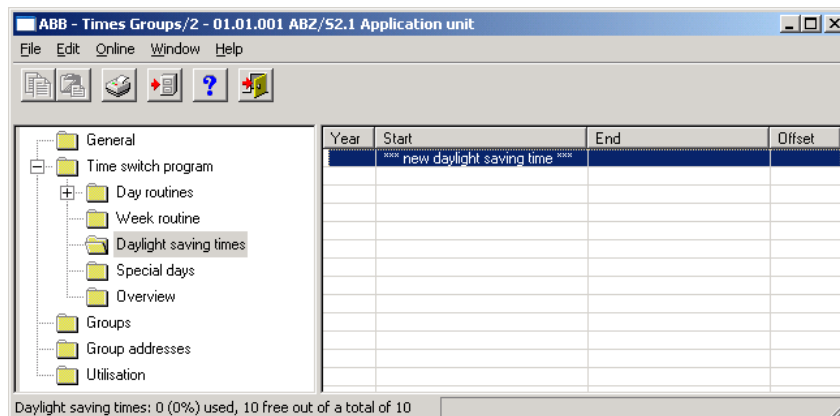


Fig. 108: Dialog window: "Insert new daylight saving time"

To insert a daylight saving time, first select *Time switch program* in the selection area followed by *Daylight saving times*.

The associated table is activated in the right-hand window.

The table is divided into **Year**, **Start**, **End** and **Offset**.

The meaning of the individual columns is as follows:

#### **Year**

The year is displayed in this column.

#### **Start**

The start of the daylight saving time is displayed in this column.

#### **End**

The end of the daylight saving time is displayed in this column.

#### **Offset**

The time adjustment (offset) is displayed in this column.

The parameter window *Daylight saving time* is activated in the following way:

- by double-clicking on **\*\*\* new daylight saving time \*\*\*** or
- by pressing the right mouse button and selecting *New daylight saving time* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *New daylight saving time* in the pop-up menu.

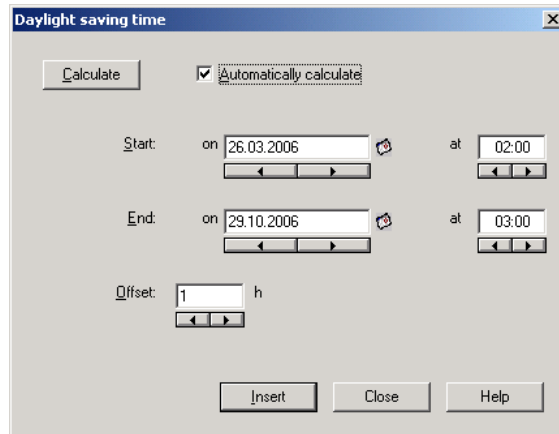


Fig. 109: Parameter window: "Insert daylight saving time"

### Calculate

If the *Calculate* button is pressed, the daylight saving times can be calculated automatically and in sequence. The calculated daylight saving times appear under *Start* and *End*. The calculated daylight saving times can be adopted with the help of the *Insert* button.

The prerequisite for the automatic calculation is the activation of the *Automatically calculate* parameter.

**Note:** The start and end of the daylight saving time are calculated according to the conversion rules stored in your operating system for converting standard time to daylight saving time.

**Automatically calculate**

Options                    activated = tick/  
                                  not activated = no tick

If the parameter is activated, the daylight saving time is calculated automatically according to the conversion rules stored in the operating system. If it is not activated, the existing date is retained and only the year is incremented.

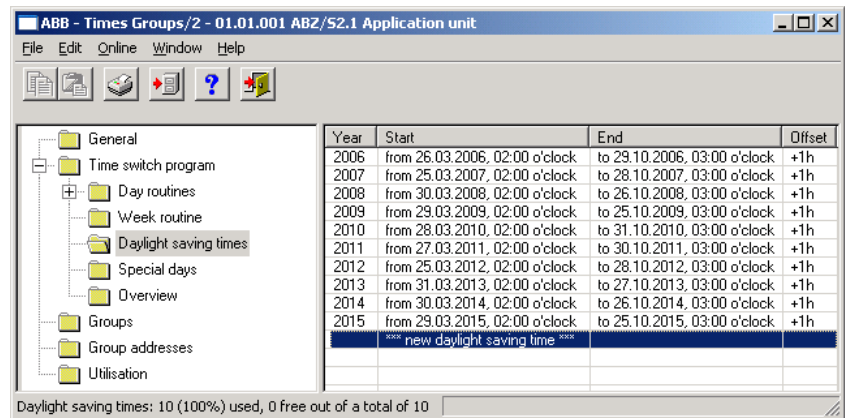


Fig. 110: Dialog window: "Option to automatically calculate daylight saving time activated"

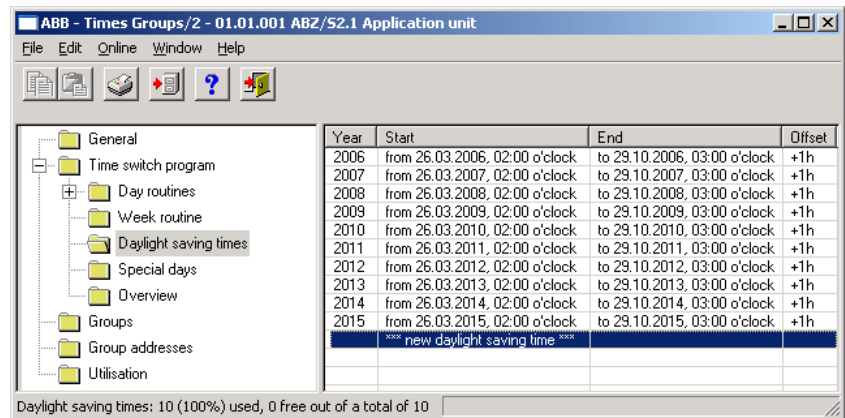


Fig. 111: Dialog window: "Option to automatically calculate daylight saving time not activated"

Note:                    A maximum of 10 daylight saving times can be calculated.

**Start, End**

The daylight saving time is defined by entering the date (*on*) and time (*at*) of the *start* and *end*.

The date for the start and end can be set in a range between 1.1.2000 and 31.12.2035. The representation is in numbers which are separated by full stops in the sequence *Day. Month. Year*. Entries for the year in the range 36...99 are rejected. To the right of the input field for the date, there is a button with which the calendar for the current date can be displayed. The input of the date for the start and end can be carried out via the selection of a date in the calendar or through the direct input of the date.

The displays for the hour can be edited via the buttons *Left arrow* and *Right arrow*.

**Offset**

An *offset*, i.e. the time adjustment can be set.

Note: With the start of the daylight saving time, the current time of the internal clock is adjusted by this value and reset with the end of the daylight saving time.

**“Insert” button**

The settings are adopted via the “Insert” button.

**“Close” button**

When the “Close” button is pressed, the function is ended and the parameter window closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.



## 3.4.6.2 Edit daylight saving time

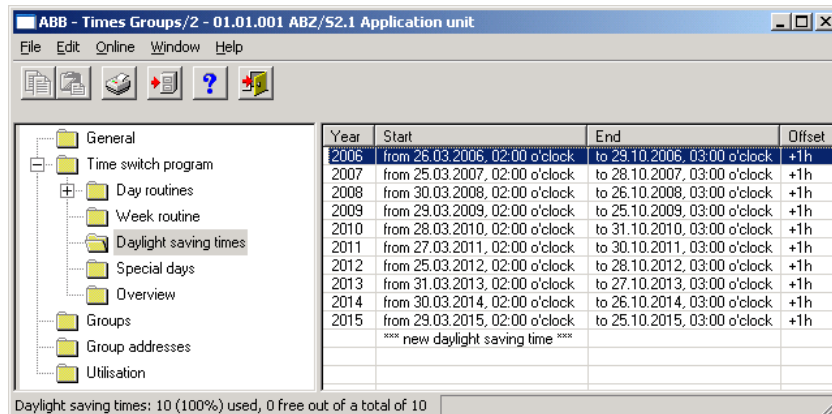


Fig. 112: Dialog window: "Edit daylight saving time"

To edit the daylight saving time, first select *Time switch program* in the selection area followed by *Daylight saving times*, e.g. the year 2006. The associated table is activated in the right-hand window.

The table is divided into **Year**, **Start**, **End** and **Offset**.

The meaning of the individual columns is as follows:

#### Year

The year is displayed in this column.

#### Start

The start of the daylight saving time is displayed in this column.

#### End

The end of the daylight saving time is displayed in this column.

#### Offset

The time adjustment (offset) is displayed in this column.

The parameter window *Daylight saving time* is activated in the following way:

- by double-clicking on *\*\*\* new daylight saving time \*\*\** or
- by pressing the right mouse button and selecting *New daylight saving time* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *New daylight saving time* in the pop-up menu.

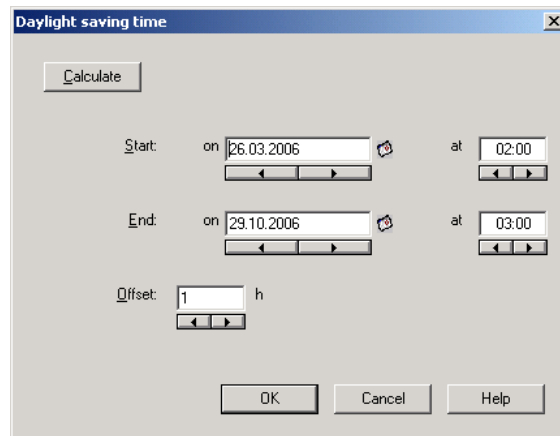


Fig. 113: Parameter window: "Select daylight saving time"

The selected daylight saving time is now available for editing.

#### Start, End, at

It is possible to edit the *start*, the *end* and *at* which time via the buttons *Left arrow* and *Right arrow*.

#### Offset

The *offset* can be edited via the buttons *Left arrow* and *Right arrow*.

#### "OK" button

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

### 3.4.6.3 Delete daylight saving time

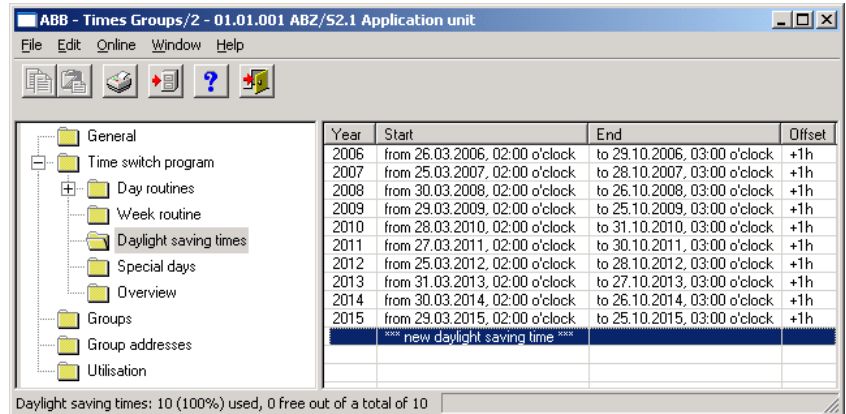


Fig. 114: Dialog window: "Delete daylight saving time"

To delete a daylight saving time, first select *Time switch program* in the selection area followed by *Daylight saving times*.

The associated table is activated in the right-hand window.

The table is divided into **Year**, **Start**, **End** and **Offset**.

The meaning of the individual columns is as follows:

#### Year

The year is displayed in this column.

#### Start

The start of the daylight saving time is displayed in this column.

#### End

The end of the daylight saving time is displayed in this column.

#### Offset

The time adjustment (offset) is displayed in this column.

Select the daylight saving time which should be deleted e.g. the year 2006.

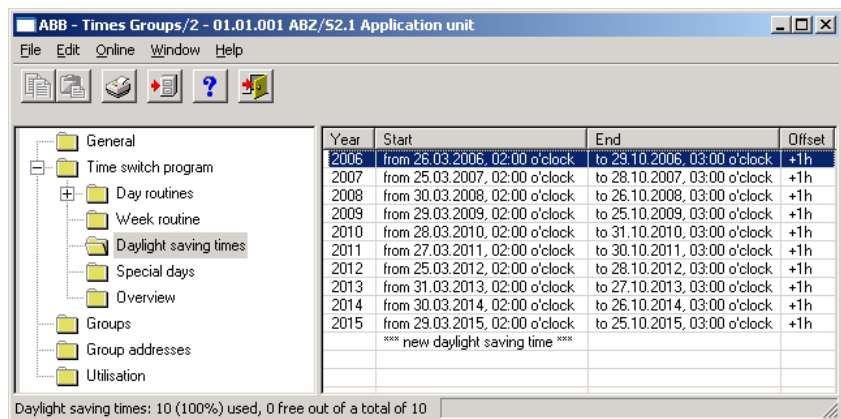


Fig. 115: Dialog window: "Select daylight saving time"

The selected daylight saving time is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *Delete* in the pop-up menu.

#### "Yes" button

Before the daylight saving time can be deleted, a prompt must be confirmed with Yes.

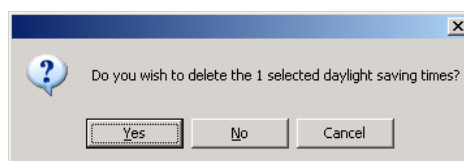


Fig. 116: Parameter window: "Daylight saving time, Prompt"

#### "No" button

The daylight saving time is not deleted when the *No* button is pressed.

#### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

## 3.4.7 Special days - General

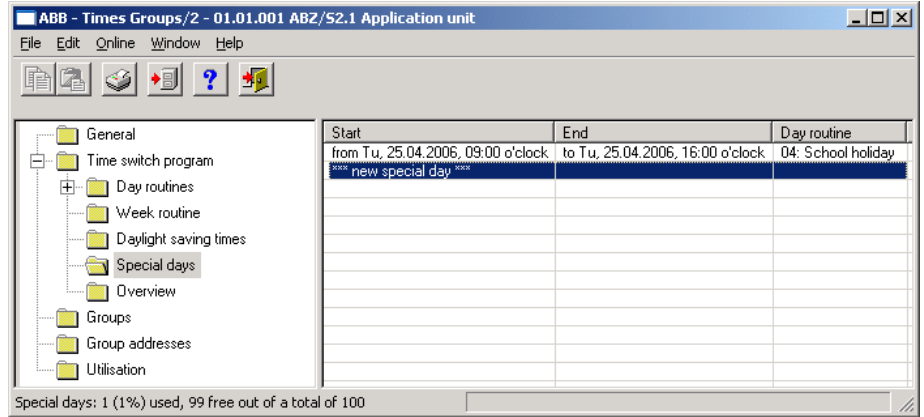


Fig. 117: Dialog window: "Special days - General"

Special days are days on which the standard week routine and the associated day routine should not be carried out. Special days on which a specific day routine is executed can be defined for both one day (e.g. Bank Holiday) and several days (e.g. holidays).

### 3.4.7.1 Insert new special day

Note: Before a new special day is inserted, a day routine must have been created under *Day routines*.

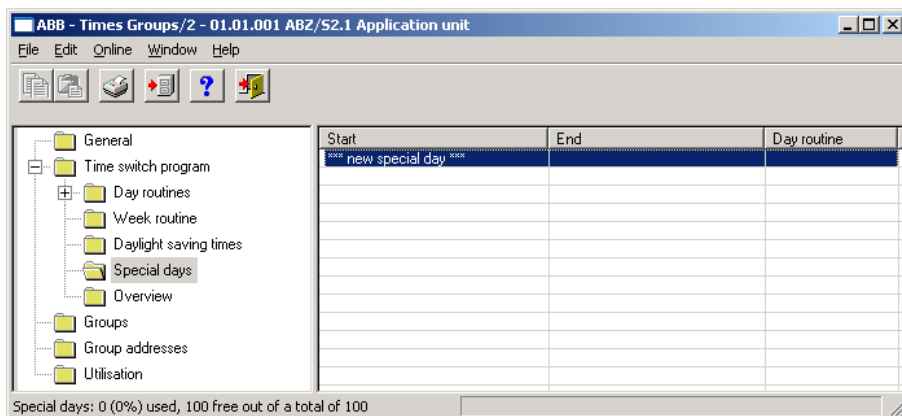


Fig. 118: Dialog window: "Insert new special day"

To insert a special day, first select *Time switch program* in the selection area followed by *Special days*.

The associated table is activated in the right-hand window.

The table is divided into **Start**, **End** and **Day routine**.

The meaning of the individual columns is as follows:

#### Start

The start of the special day is displayed in this column.

#### End

The end of the special day is displayed in this column.

#### Day routine

This column displays the day routine.

The parameter window *Special day range* is activated in the following way:

- by double-clicking on *\*\*\* new special day \*\*\** or
- by pressing the right mouse button and selecting *New special day* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *New special day* in the pop-up menu.

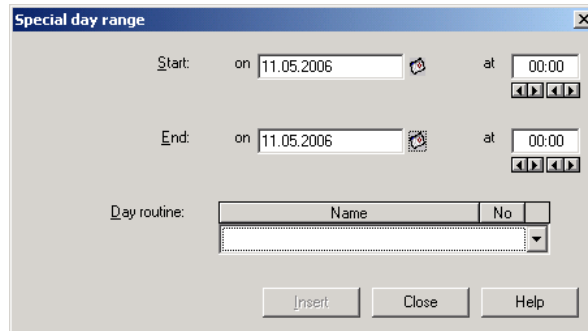


Fig. 119: Parameter window: "Set special day range"

### Start, End

By entering the date (*on*), time (*at*), *start* and *end* of the period, it is defined which day routine should apply which deviates from the standard week routine.

The date for the start and end can be set in the range between 1.1.2000 and 31.12. 2035. The representation is in numbers which are separated by full stops in the sequence *Day. Month. Year*. Entries for the year in the range 36...99 are rejected. To the right of the input field for the date, there is a button with which the calendar for the current date can be displayed. The input of the date for the start and end can be carried out via the selection of a date in the calendar or through the direct input of the date.

The displays for the hours and minutes can be edited separately via the buttons *Left arrow* and *Right arrow*.

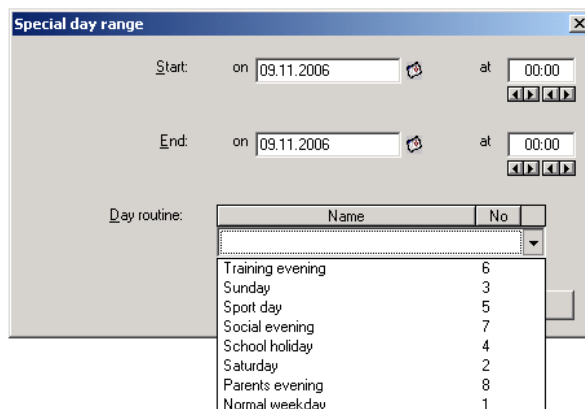


Fig. 120: Parameter window: "Special day range, Select day routine"

### Day routine

Select a day routine from the list of day routines.

### Name

This column displays the names of the day routines (*DR Name*).

### No.

This column displays the consecutive number of the day routine (*DR No.*).

### "Insert" button

The settings are adopted via the "Insert" button.

### "Close" button

When the "Close" button is pressed, the function is ended and the parameter window closes.

### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.



## 3.4.7.2 Edit special day

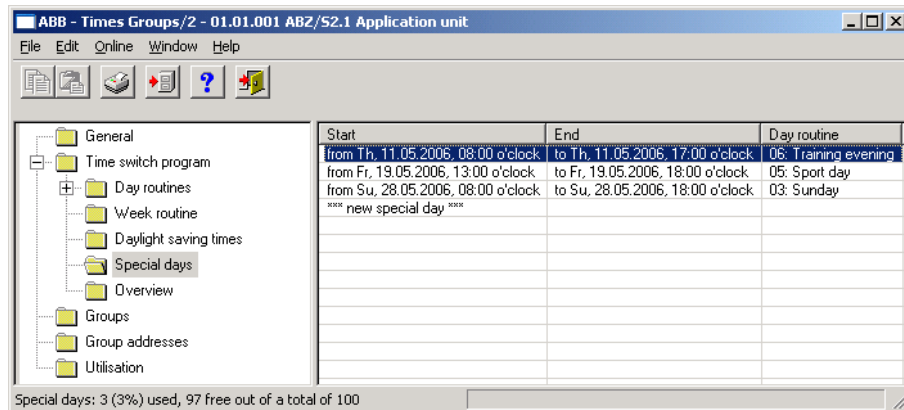


Fig. 121: Dialog window: "Edit special day"

To edit a special day, first select *Time switch program* in the selection area followed by *Special days*, e.g. from Th. 11.05.2006, 08:00 o'clock. The associated table is activated in the right-hand window.

The table is divided into **Start**, **End** and **Day routine**.

The meaning of the individual columns is as follows:

**Start**

The start of the special day is displayed in this column.

**End**

The end of the special day is displayed in this column.

**Day routine**

This column displays the day routine.

The parameter window *Special day range* is activated in the following way:

- by double-clicking on the selected special day or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

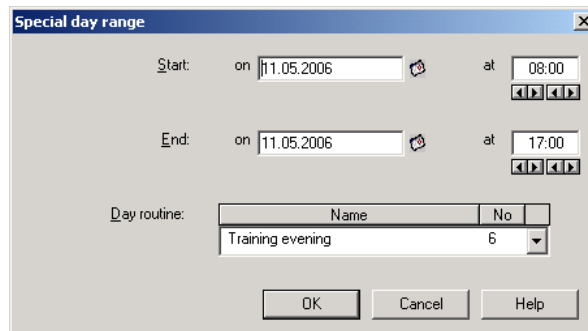


Fig. 122: Parameter window: "Modify special day range"

The selected *Special day range* dialog is now available for editing.

### Start, End, Day routine

The start, end and day routine can be edited.

#### Time at

The displays for hours and minutes can be edited separately via the buttons *Left arrow* and *Right arrow*.

#### "OK" button

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

3.4.7.3 Delete special day

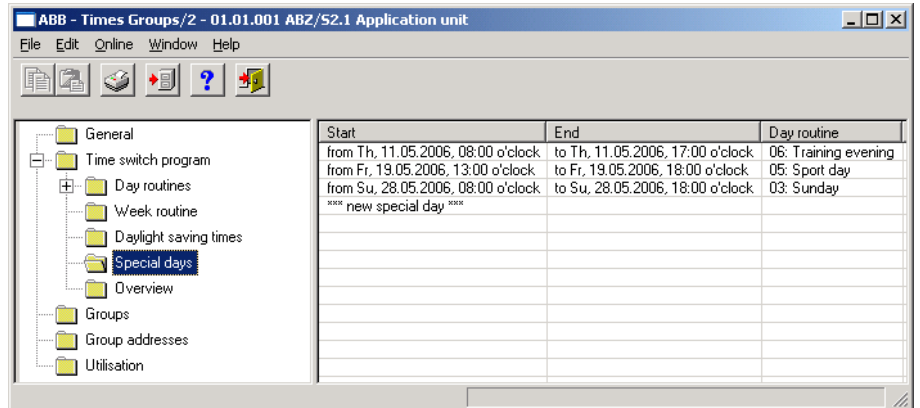


Fig. 123: Dialog window: "Delete special day"

To delete a special day, first select *Time switch program* in the selection area followed by *Special days*.

The associated window is activated in the right-hand window.

The table is divided into **Start**, **End** and **Day routine**.

The meaning of the individual columns is as follows:

**Start**

The start of the special day is displayed in this column.

**End**

The end of the special day is displayed in this column.

**Day routine**

This column displays the day routine.

Select the special day which should be deleted e.g. from Th. 11.05.2006, 08:00 o'clock.

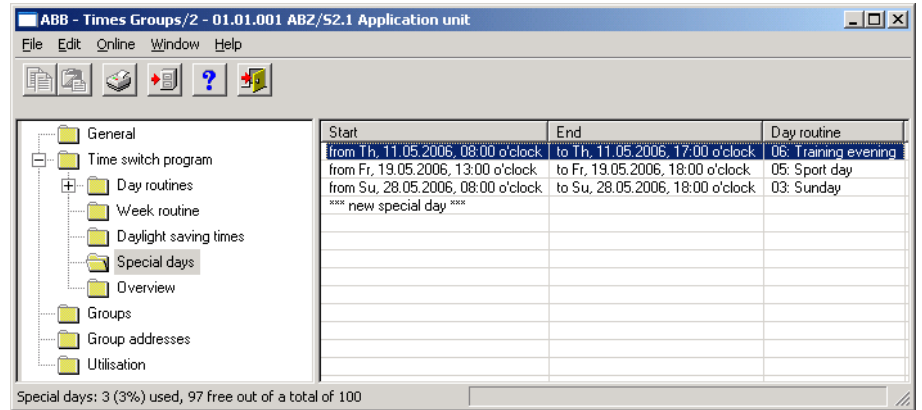


Fig. 124: Dialog window: "Select special day"

The selected special day is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu.
- by selecting *Edit* in the menu bar and then activating *Delete* in the pop-up menu.

**"Yes" button**

Before the special day can be deleted, a prompt must be confirmed with Yes.

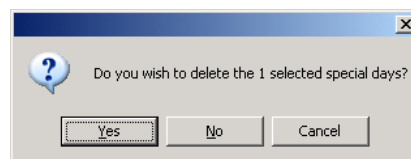


Fig. 125: Parameter window: "Special day, Prompt"

**"No" button**

The special day is not deleted when the *No* button is pressed.

**"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

### 3.4.7.4 Overlapping of periods

**Note:** If a new special day is entered and the period of the new special day overlaps periods for special days that have already been created, the following message appears.

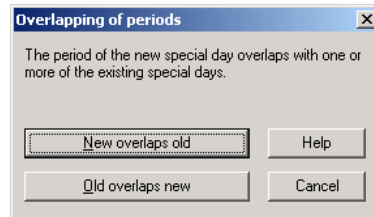


Fig. 126: Parameter window: "Special days, Overlapping of periods"

#### New overlaps old

With the selection *New overlaps old*, the new entry overlaps existing entries in the same period (see examples).

#### Old overlaps new

With the selection *Old overlaps new*, the new entry does not overlap existing entries in the same period (see examples).

	Example 1	Example 2
Old entry	DR 1	DR 1
New entry	DR 2	DR 2
<b>New overlaps old</b>	DR 1   DR 2   DR 1	DR 2
<b>Old overlaps new</b>	DR 1	DR 2   DR 1   DR 2

Table 8: Example of overlapping of periods

**Note:** If there is an overlapping of periods, a list with the corrections is displayed.

#### “Cancel” button

When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

#### “Help” button

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

3.4.8 Overview - General

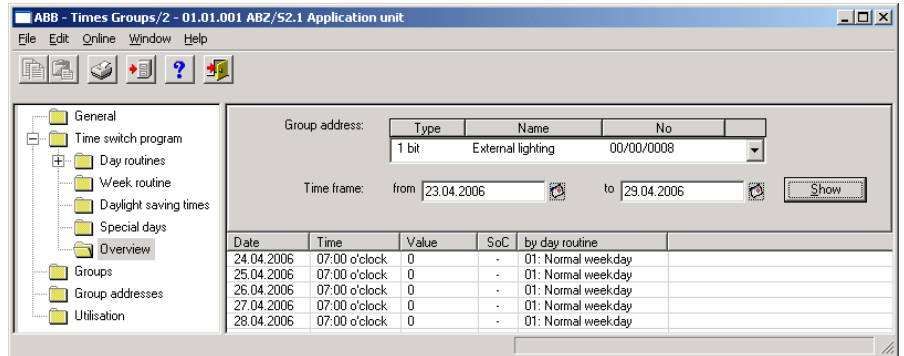


Fig. 127: Dialog window: "Overview - General"

The *Overview* folder displays the created day routines for the set group address and for the set period.

**Note:** So that all the elements of the table area are visible, it is advisable to widen the window until the horizontal bar disappears.

The number of entries in the *Overview* table is limited to 800.

3.4.8.1 Display overview

Note: Before an overview is edited, group addresses must be linked with day routines.

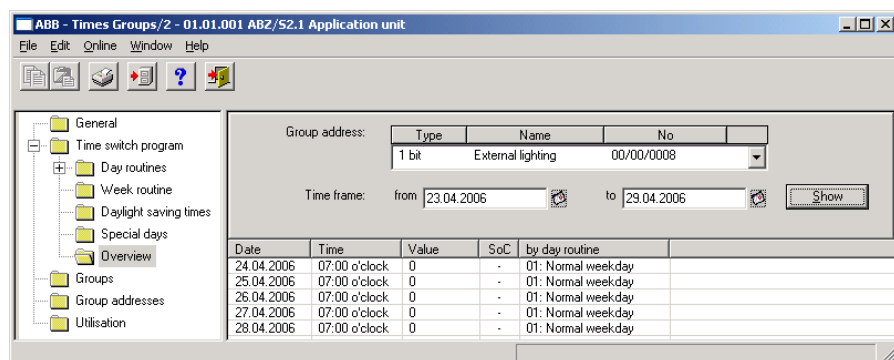


Fig. 128: Dialog window: "Display overview"

To display an overview, first select *Time switch program* in the selection area followed by *Overview*.

The associated table is activated in the right-hand window.

The table is divided into **Date**, **Time**, **Value**, **SoC** and **by day routine**. The parameter window contains the parameters *Group address*, *Time frame* and the *Show* button.

The meaning of the individual columns and parameters is as follows:

**Group address, “Show” button**

After selecting a group address from the list field, selecting a period and pressing the *Show* button, the intervals at which telegrams are sent with this group address and the values which are sent with these telegrams are displayed.

The meaning of the individual columns is as follows:

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**Name**

The *name* of the group address is defined during the parameterisation of the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

**No.**

The *number* of the group address is the unique identifier of a group address.



**Time frame, from, to**

The date for the *Time frame from ...* can be set in the range between 1.1.2000 and 31.12. 2035. The representation is in numbers which are separated by full stops in the sequence *Day. Month. Year*. Entries for the year in the range 36...99 are rejected. To the right of the input field for the date, there is a button with which the calendar for the current date can be displayed. The input of the date for the start and end can be carried out via the selection of a date in the calendar or through the direct input of the date.

The meaning of the individual columns is as follows:

**Date**

This column displays the date when a telegram is sent for the selected group address.

**Time**

This column displays the time at which a telegram is sent for the selected group address.

**Value**

This column displays the value which is sent with this telegram for the selected group address e.g. switching the light on or off.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

**by day routine**

This column displays which switching time is assigned to this day routine for the selected group address.

### 3.4.9 Groups - General

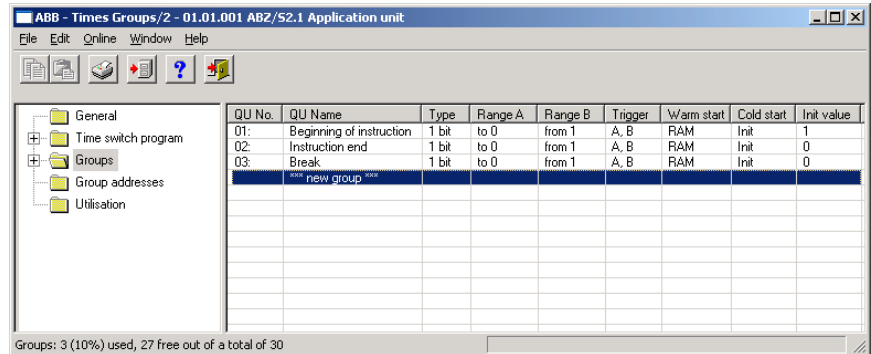


Fig. 129: Dialog window: "Groups - General"

#### How does a group function?

A group means the combination of group addresses whose assigned communication objects should be influenced in the same way when an event occurs.

It is defined in the time switch program when telegrams are sent on the bus with specific group addresses and specific values.

If several telegrams with specific group addresses and specific values should be sent repeatedly at specific times, they can be combined into a so-called group e.g. the lighting in room 1, room 2 and room 3 should be switched on repeatedly at 15:00, 16:00, 17:00 and 18:30 and the blinds in room 1, room 2 and room 3 should be lowered.

The group addresses and values assigned to these functions can now be combined into a group e.g. with the name "Room 1, 2, 3". You can therefore designate a group as a functional group and the combined group addresses as group members.

It is then only necessary to enter the group address of a trigger of this group in the time switch program e.g. with the name "Room 1, 2, 3" in order to send telegrams on the bus with the group addresses combined in the group (group members) and values.

The group address which triggers a group is called a group trigger.

This saves time during the parameterisation and the time switch program becomes clearer.

If a group is activated, it sends telegrams with the group addresses which are contained in the list of group members and with the values which are assigned to these group addresses.

Several group addresses with different types can be combined together into a group.

3.4.9.1 Insert new group

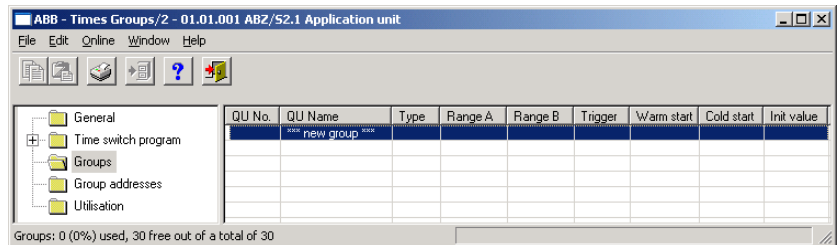


Fig. 130: Dialog window: "Insert new group"

To insert a group, select *Group* in the selection area. The associated table is activated in the right-hand window.

The table is divided into **QU No.**, **QU Name**, **Type**, **Range A**, **Range B**, **Trigger**, **Warm start**, **Cold start** and **Init value**.

The meaning of the individual columns is as follows:

**QU No., QU Name, Type, Range A, Range B, Trigger**

This table lists the consecutive numbers of the group (*QU No.*), the name of the group (*QU Name*), the type of the group trigger (*Type*), and the criteria for the *Trigger* in *Range A* and *Range B*.

**Warm start, Cold start, Init value**

This table lists the behaviour in the event of a *Warm start* and a *Cold start* as well as the associated *Init value*.

The *Group* parameter window is activated in the following way:

- by double-clicking on **\*\*\* new group \*\*\*** or
- by pressing the right mouse button and selecting *New group* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *New group* in the pop-up menu.

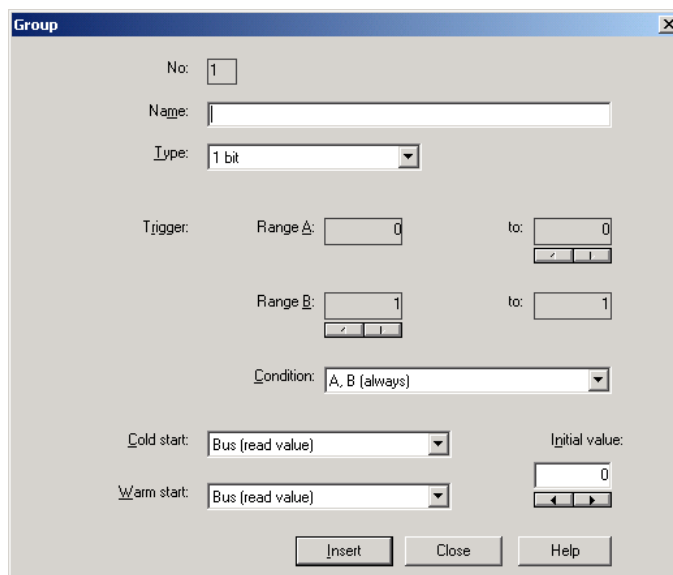


Fig. 131: Parameter window: "Group"

### No.

The group number (*QU No.*) is automatically allocated by the application program *Times Groups/2* and is a consecutive number for the unique identification of the group.

### Name

The group name (*QU Name*) can be freely selected and can e.g. describe which functions are activated by this functional group or which part of the building is affected by the triggering of the group. A maximum of 50 characters are available.

**Type**

Options:            1 bit /  
                         1 byte unsigned /  
                         1 byte signed /  
                         2 byte unsigned /  
                         2 byte signed /  
                         2 byte floating point

The *type* denotes which type of value is assigned to the trigger of a group (functional group) i.e. whether the group is triggered e.g. by a telegram with the binary value 1 or a telegram with the 1-byte value 128.

A group can be activated by a telegram with the group address of a group trigger of this group. Different types of values can be sent with a telegram e.g. 1-bit value i.e. binary values such as 0 and 1 or e.g. 1-byte values such as 0, 128 or 255, which can then be interpreted as 0%, 50% and 100%.

**Trigger**

The limits within which the values must lie to trigger the group are defined under *Trigger* for *Range A* and *Range B*. In the case of the 1-bit type, there are only the states 0 and 1. These values cannot be edited.

If a group is triggered by a *group trigger*, specific functions are activated e.g. switching the light on or off. The light can thereby be switched on in specific rooms e.g. by triggering a group with the value "0" and switched on in these rooms by triggering a group with the value "1". A group can therefore behave in a different way when triggered by the value "0" than by the value "1".

You could therefore also designate the triggering of a group by the value "1" as the activation of the group (functional group) and the triggering of the group by the value "0" as the deactivation of the group (functional group).

Binary values which trigger a group (functional group) can only adopt the values "0" and "1". If the group is triggered e.g. by a 1-byte value, the triggered values can lie in a range between 0...255 or between 0%...100%.

Value ranges can therefore be entered for the activation of a group and for the deactivation of a group.

**Range A, Range B**

*Range A* contains those values which activate or group or those values which trigger in *Range A* while *Range B* contains those values which deactivate a group or those values which trigger in *Range B*.

If a group is triggered e.g. by a 2-byte value with which the room temperature of a room is transmitted, the blinds could be opened e.g. by a temperature value under 22 °C and the air conditioning and lighting could be switched off. In the event of a temperature value above 24 °C, the blinds could be closed and the lighting and air conditioning could be switched on.

So that the group is not triggered each time e.g. after the multiple transmission of the same values i.e. to activate specific functions, further criteria for triggering the group can be defined.

Note: Different options appear in the *Trigger* parameter, depending on which type has been selected.

**Type 1 bit**

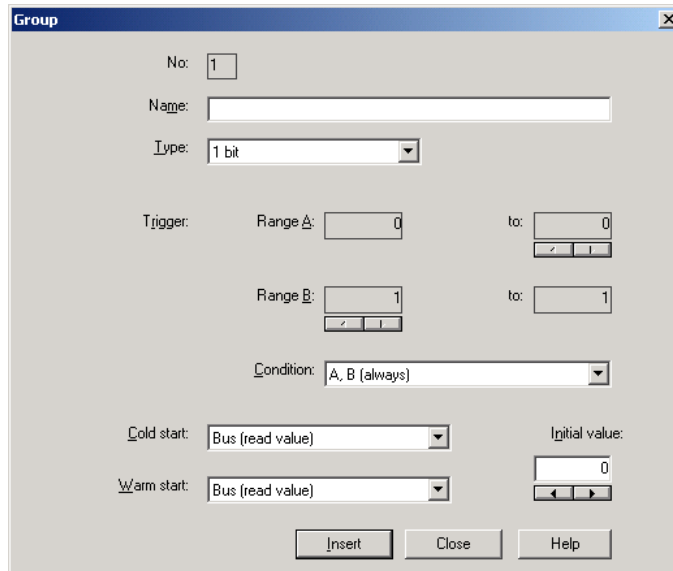


Fig. 132: Parameter window: "Group, Data type 1 bit"

**Object value (0...1)**

Options: 0/1

This parameter is used to select which object value is sent.

**Type 1 byte unsigned (0...255)**

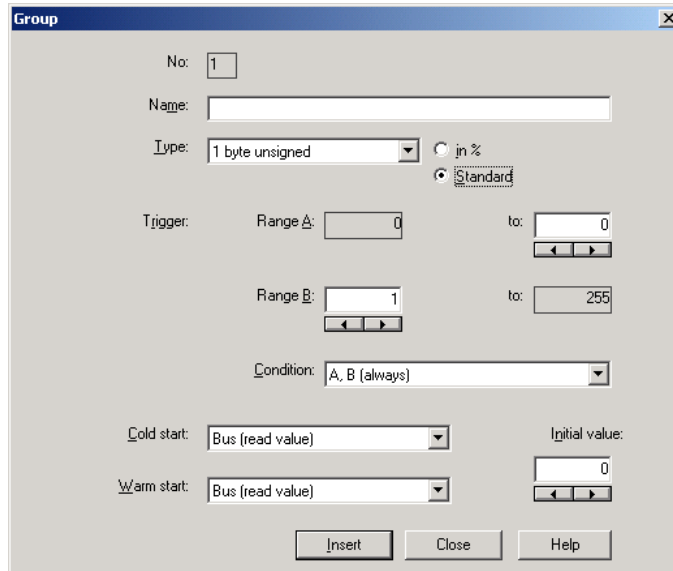


Fig. 133: Parameter window: "Group, Data type 1 byte unsigned (0...255)"

**Object value (0...255) and Standard**

Options: 0...255

This parameter is used to select which object value is sent.

If *Standard* is also selected, the object value is issued without a unit of measurement.



## Type 1 byte unsigned (0...100%)

The screenshot shows a software window titled "Group" with a close button (X) in the top right corner. The window contains the following fields and controls:

- No.:** A text box containing the number "1".
- Name:** An empty text box.
- Type:** A dropdown menu showing "1 byte unsigned". To its right are two radio buttons: "in %" (which is selected) and "Standard".
- Trigger:** Two rows of range settings. The first row has "Range A:" followed by a text box with "0" and a "%" sign, and "to:" followed by a text box with "0,00" and a "%" sign. Below these are left and right arrow buttons. The second row has "Range B:" followed by a text box with "0,39" and a "%" sign, and "to:" followed by a text box with "100" and a "%" sign. Below these are left and right arrow buttons.
- Condition:** A dropdown menu showing "A, B (always)".
- Cold start:** A dropdown menu showing "Bus (read value)".
- Warm start:** A dropdown menu showing "Bus (read value)".
- Initial value:** A text box with "0,00" and a "%" sign, with left and right arrow buttons below it.
- At the bottom are three buttons: "Insert", "Close", and "Help".

Fig. 134: Parameter window: "Group, Data type 1 byte unsigned (0...100%)"

**Object value (0...100%) und in %**Options: 0,00...100%

This parameter is used to select which object value is sent.

If the option *in %* is also selected, 0 = 0% and 255 = 100% are assigned to the object values.

**Type 1 byte signed (-128...127)**

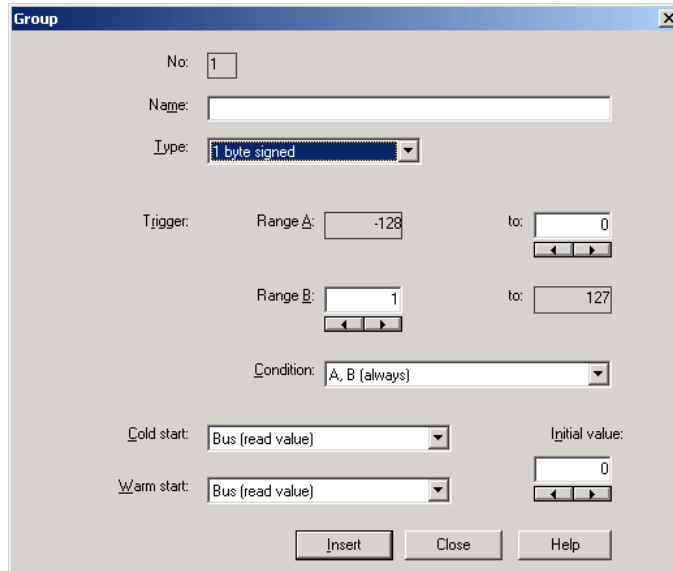


Fig. 135: Parameter window: "Group, Data type 1 byte signed (-128...127)"

**Object value (-128...127)**

Options: -128...0...127

This parameter is used to select which object value is sent.

**Type 2 byte unsigned (0...65,535)**

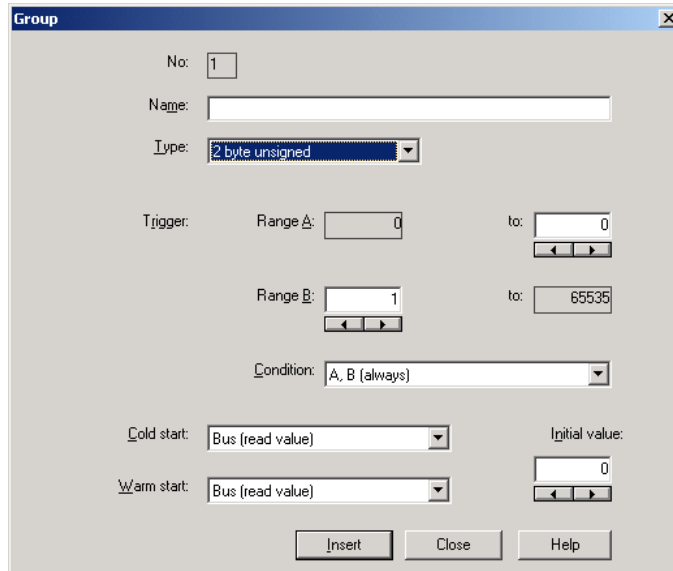


Fig. 136: Parameter window: "Group, Data type 2 byte unsigned (0...65,535)"

**Object value (0...65,535)**

Options: 0...65,535

This parameter is used to select which object value is sent.

**Type 2 byte signed (-32,768...32,767)**

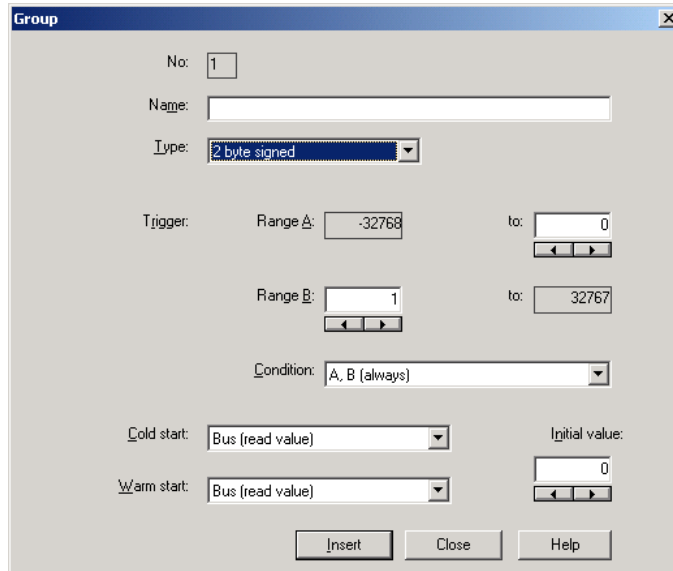


Fig. 137: Parameter window: "Group, Data type 2 byte signed (-32,768...32,767)"

**Object value (-32,768...32,767)**

Options: -32,768...0...32,767

This parameter is used to select which object value is sent.

Type 2 byte floating point

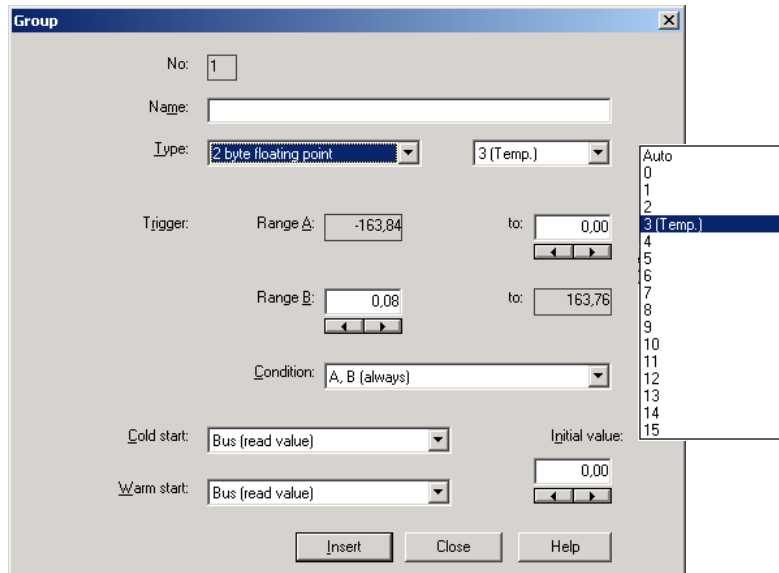


Fig. 138: Parameter window: "Group, Data type 2 byte floating point"

**Object value (-163.84...163.76) and Exponent 3 (Temp.)**

Options: -163.84...0...163.76

This parameter is used to select which object value is sent.

**Exponent**

Options:           Auto /  
                          0...3 (Temp.)...15

This parameter is used to select which exponent is assigned to the object value.

Note:               Different object values can be set, depending on the exponent which is selected. The table below shows all the options.

Exponent	Object value
Auto	-671,088.64...0.00...670,760.96
0	-20.48...0.00...20.47
1	-40.96...0.00...40.94
2	-81.92...0.00...81.88
3 (Temp.)	-163.84...0.00...163.76
4	-327.68...0.00...327.52
5	-655.36...0.00...655.04
6	-1,310.72...0.00...1,310.08
7	-2,621.44...0.00...2,620.16
8	-5,242.88...0.00...5,240.32
9	-10,485.76...0.00...10,480.64
10	-20,971.52...0.00...20,961.28
11	-41,943.04...0.00...41,922.56
12	-83,886.08...0.00...83,845.12
13	-167,772.16...0.00...167,690.24
14	-335,544.32...0.00...335,380.48
15	-671,088.64...0.00...670,760.96

Table 9:       Exponent

**Condition**

Options:            A, B (always) /  
                         >A, >B (new entry) /  
                         A<>B (hysteresis)

The conditions for triggering a group are defined under *Condition*.

**Option: A, B (always)**

The entry *A, B (always)* means that the group is always triggered if the trigger value lies in *Range A* or *Range B*. If e.g. a telegram would be received several times with the same value or with values in the same range, the group would be triggered after each transmission.

If the temperature value of 21 °C is transmitted several times in succession, the group is activated each time and telegrams are thus sent each time to open the blinds and to switch off the air conditioning and lighting.

**Option: >A, >B (new entry)**

The entry *>A, >B (new entry)* means that the group is only triggered if the trigger value is located firstly in *Range A* or *Range B*. If the same value is sent several times to the Application Unit Time ABZ/S 2.1, the group is only triggered on the first transmission.

If the group was finally triggered by the transmission of a temperature value in *Range A*, e.g. 21 °C, then values were sent outside *Range A* e.g. 23 °C and then again a value in *Range A* such as 21 °C, the initial transmission of the value 21 °C activates the group and telegrams are sent to open the blinds and to switch off the air conditioning and lighting.

**Option: A < > B (hysteresis)**

The entry *A < > B* (*hysteresis*) means that the group is only triggered if the trigger value is first located in *Range A* and the last triggering is carried out by a value in *Range B* or if the trigger value is first located in *Range B* and the last triggering is carried out by a value in *Range A*.

If the group was last triggered by the transmission of a value in *Range A*, e.g. 21 °C (the group is thereby activated e.g. to switch on the heating) and then values outside *Range A* have been transferred e.g. 23 °C followed by another value in *Range A* such as 21 °C, the group is no longer triggered by this value. The group can only be retriggered if a value is transmitted which lies in *Range B* i.e. above 24 °C (the group is thereby deactivated e.g. to switch off the heating).

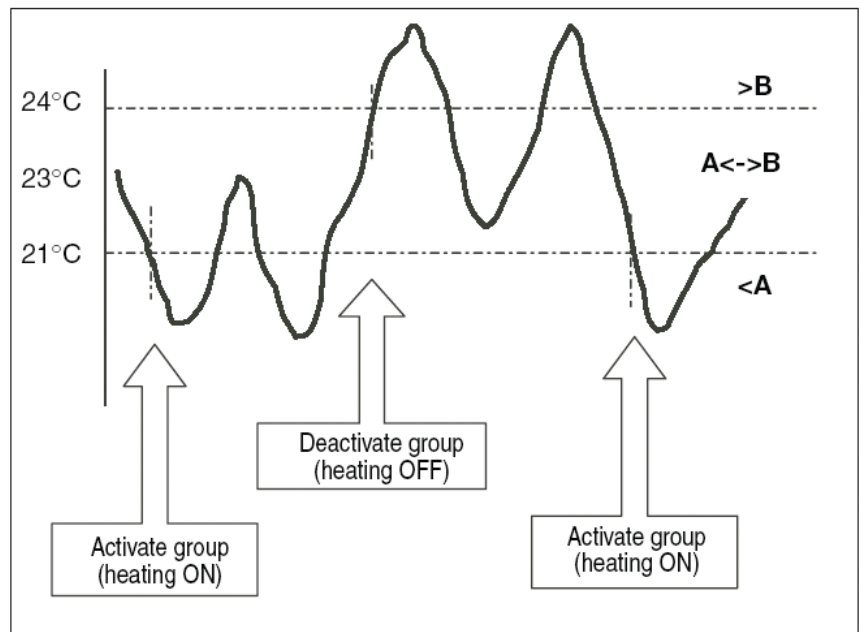


Fig. 139: Example: Hysteresis, Group activated/deactivated



**Cold start**

Options:            Bus (read value) /  
                          Init (use initial value) /  
                          none (no reaction)

The behaviour of the Application Unit Time on bus voltage recovery is defined under *Cold start*.

Information that is currently stored in the Application Unit Time e.g. Group 1 triggered, is stored for at least 1 h on bus voltage failure. If the bus voltage failure lasts for longer than 1 h, the Application Unit Time automatically detects whether the information is still stored or whether there has been a data loss. The application program and the parameters are permanently stored in the Application Unit Time.

In the event of a data loss, the Application Unit Time carries out a so-called cold start on bus voltage recovery i.e. it can no longer access the stored data and must either work with preset data or read relevant data from other bus devices.

It should further be noted that the time switch program does not start automatically after a cold start as the current time or date are no longer available. See also *Internal clock*.

It can be defined how the Application Unit Time should react in the event of a cold start.

**Option: Bus (read value)**

After bus voltage recovery, the Application Unit Time reads out the relevant data from other bus devices. Depending on the value received and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**Option: Init (use initial value)**

The Application Unit Time uses preset values after bus voltage recovery. Depending on the preset values and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**What is the initial value?**

If the Application Unit Time should use a preset value after a bus voltage recovery with data loss i.e. after a cold start, this value is listed under *Initial value*.

**Option: none (no reaction)**

The Application Unit Time only triggers a group if a telegram with a value in *Range A* or *Range B* has been received.

The group is always triggered in principle after a cold start on receipt of the first value which lies in *Range A* or *Range B*.

**Warm start**

Options:            Bus (read value) /  
                      RAM (old value) /  
                      none (no reaction)

The behaviour of the Application Unit Time on bus voltage recovery is defined under *Warm start*.

Information that is currently stored in the Application Unit Time e.g. Group 1 triggered, is stored for at least 1 h on bus voltage failure. If the bus voltage failure lasts for longer than 1 h, the Application Unit Time automatically detects whether the information is still stored or whether there has been a data loss. The application program and the parameters are permanently stored in the Application Unit Time.

If the stored data is still available, the Application Unit Time carries out a so-called warm start on bus voltage recovery i.e. it can work with the stored data but it can also use preset data or read relevant data from other bus devices.

It can be defined how the Application Unit Time should react in the event of a warm start.

**Option: Bus (read value)**

After a bus voltage recovery, the Application Unit Time reads out the relevant data from other bus devices. Depending on the value received and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

In the event of a warm start, a group e.g. is no longer triggered if this group was already activated in *Range A* and should be activated again in *Range A* after reading the other bus devices and the *Trigger* parameter is no longer set to *A, B (always)*.

**Option: RAM (old value)**

After a bus voltage recovery, the Application Unit Time uses the stored values. Depending on the stored values i.e. the state prior to the bus voltage failure and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**Option: none (no reaction)**

The Application Unit Time only triggers a group if a telegram with a value in *Range A* or *Range B* has been received.

The group is always triggered in principle after a cold start on receipt of the first value which lies in *Range A* or *Range B*.

In the event of a warm start, the group is only triggered if all other criteria have been met e.g. the last value received prior to the bus failure was in *Range B* and the first value received after bus voltage recovery is in *Range A*.

**Initial value**

Under *Initial value*, you define the value which the Application Unit Time should use as a preset value after a cold start. The field is dependent on the preset type e.g. if a 1-bit type has been selected, only the values 0 and 1 can be set.

**“Insert” button**

A new group is inserted via the *Insert* button.

**“Close” button**

The parameter window is closed via the *Close* button.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

3.4.9.2 Edit group

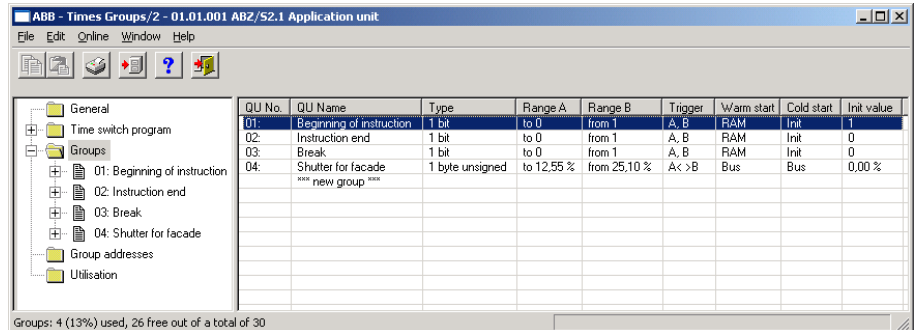


Fig. 140: Dialog window: "Edit group"

To edit a group, select *Groups* in the selection area e.g. QU No. 01. The associated table is activated in the right-hand window.

The table is divided into **QU No.**, **QU Name**, **Type**, **Range A**, **Range B**, **Trigger**, **Warm start**, **Cold start** and **Init value**.

The meaning of the individual columns is as follows:

**QU No., QU Name, Type, Range A, Range B, Trigger**

This table lists the consecutive numbers of the group (*QU No.*), the name of the group (*QU Name*), the type of the group trigger (*Type*), and the criteria for the *Trigger* in *Range A* and *Range B*.

**Warm start, Cold start, Init value**

This table lists the behaviour in the event of a *Warm start* and a *Cold start* as well as the associated *Init value*.

The *Group* parameter window is activated in the following way:

- by double-clicking on the selected group or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

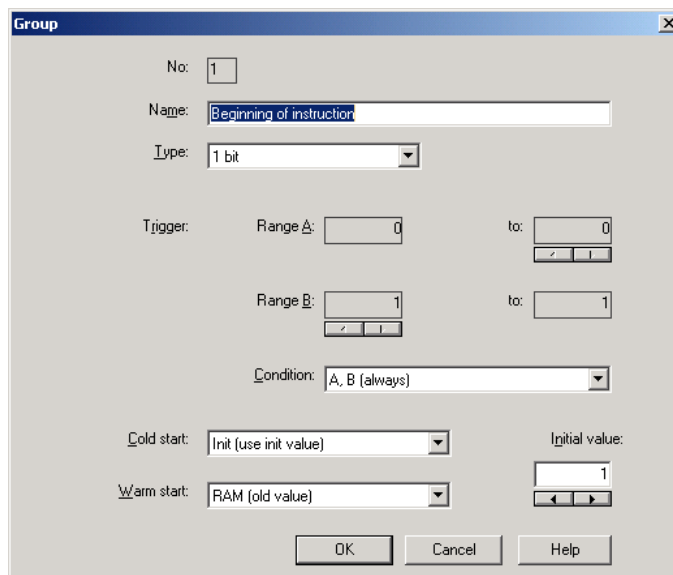


Fig. 141: Parameter window: "Select group"

The selected group is now available for editing.

### No.

The group number (*QU No.*) cannot be modified. It is automatically allocated by the application program Times Groups/2 and is a consecutive number for the unique identification of the group.

### Name

The group name (*QU Name*) can be modified. A maximum of 50 characters are available.

**Type**

Options:            1 bit /  
                         1 byte unsigned /  
                         1 byte signed /  
                         2 byte unsigned /  
                         2 byte signed /  
                         2 byte floating point

The *type* denotes which type of value is assigned to the trigger of a group (functional group) i.e. whether the group is triggered e.g. by a telegram with the binary value 1 or a telegram with the 1-byte value 128.

A group can be activated by a telegram with the group address of a group trigger of this group. Different types of values can be sent with a telegram e.g. 1-bit value i.e. binary values such as 0 and 1 or e.g. 1-byte values such as 0, 128 or 255, which can then be interpreted as 0%, 50% and 100%.

**Trigger**

The limits within which the values must lie to trigger the group are defined under *Trigger* for *Range A* and *Range B*. In the case of the 1-bit type, there are only the states 0 and 1. These values cannot be edited.

If a group is triggered by a *group trigger*, specific functions are activated e.g. switching the light on or off. The light can thereby be switched on in specific rooms e.g. by triggering a group with the value "0" and switched on in these rooms by triggering a group with the value "1". A group can therefore behave in a different way when triggered by the value "0" than by the value "1".

You could therefore also designate the triggering of a group by the value "1" as the activation of the group (functional group) and the triggering of the group by the value "0" as the deactivation of the group (functional group).

Binary values which trigger a group (functional group) can only adopt the values "0" and "1". If the group is triggered e.g. by a 1-byte value, the triggered values can lie in a range between 0...255 or between 0%...100%.

Value ranges can therefore be entered for the activation of a group and for the deactivation of a group.

**Range A, Range B**

*Range A* contains those values which activate or group or those values which trigger in *Range A* while *Range B* contains those values which deactivate a group or those values which trigger in *Range B*.

If a group is triggered e.g. by a 2-byte value with which the room temperature of a room is transmitted, the blinds could be opened e.g. by a temperature value under 22 °C and the air conditioning and lighting could be switched off. In the event of a temperature value above 24 °C, the blinds could be closed and the lighting and air conditioning could be switched on.

So that the group is not triggered each time e.g. after the multiple transmission of the same values i.e. to activate specific functions, further criteria for triggering the group can be defined.

Note: Different options appear in the *Trigger* parameter, depending on which type has been selected.

**Type 1 bit**

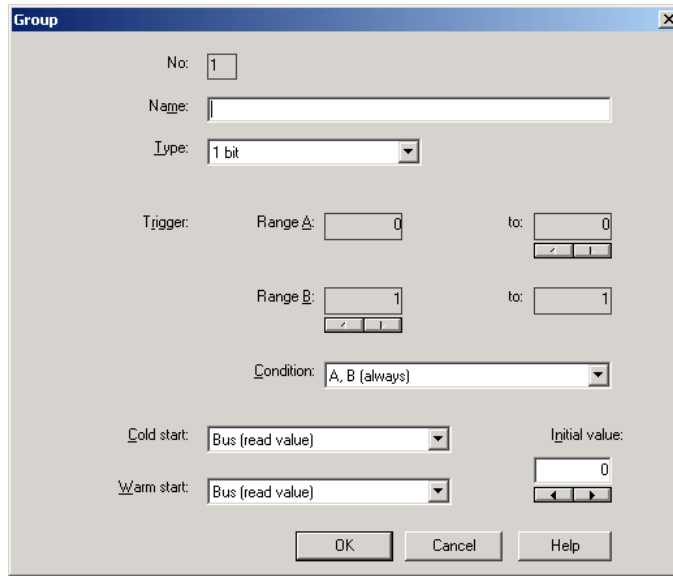


Fig. 142: Parameter window: "Group, Data type 1 bit"

**Object value (0...1)**

Options: 0/1

This parameter is used to select which object value is sent.



**Type 1 byte unsigned (0...255)**

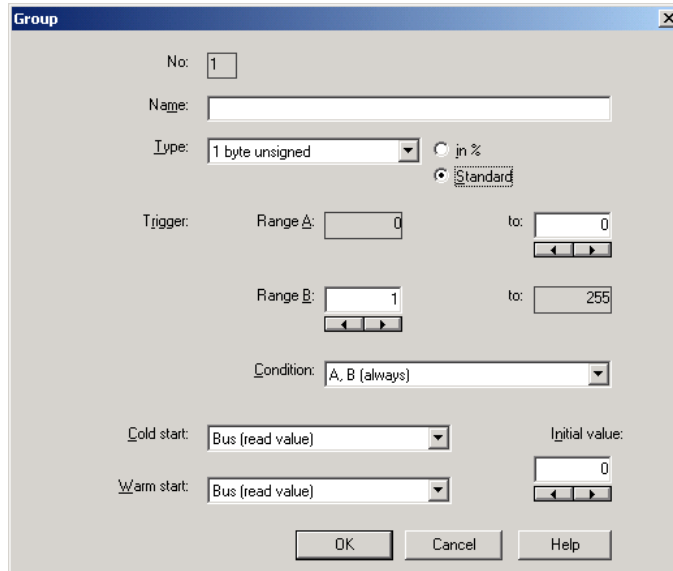


Fig. 143: Parameter window: "Group, Data type 1 byte unsigned (0...255)"

**Object value (0...255) and Standard**

Options: 0...255

This parameter is used to select which object value is sent.

If *Standard* is also selected, the object value is issued without a unit of measurement.

**Type 1 byte unsigned (0...100%)**

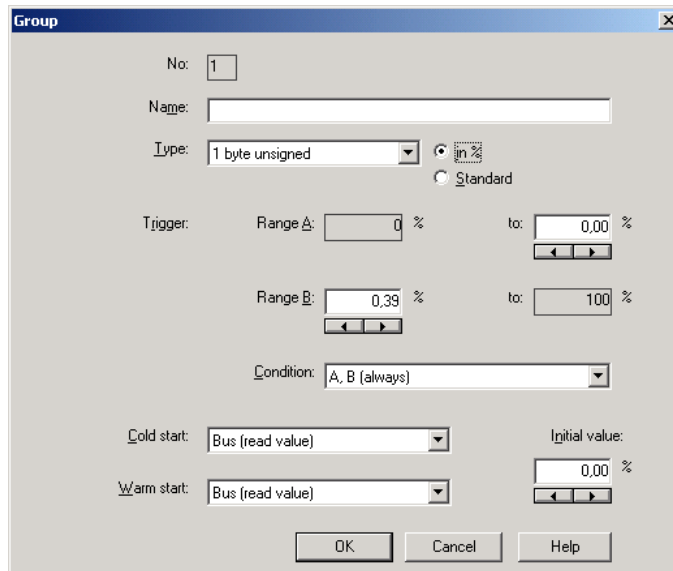


Fig. 144: Parameter window: "Group, Data type 1 byte unsigned (0...100%)"

**Object value (0...100%) and in %**

Options: 0,00...100%

This parameter is used to select which object value is sent.

If the option *in %* is also selected, 0 = 0% and 255 = 100% are assigned to the object values.

**Type 1 byte signed (-128...127)**

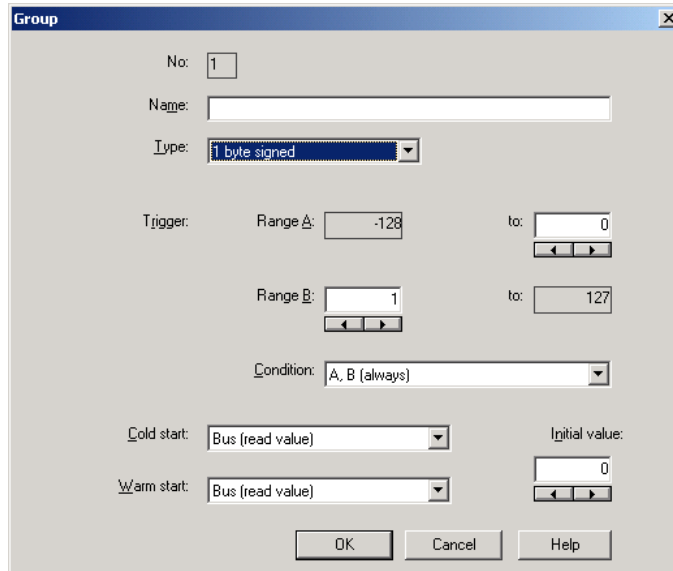


Fig. 145: Parameter window: "Group, Data type 1 byte signed (-128...127)"

**Object value (-128...127)**

Options: -128...0...127

This parameter is used to select which object value is sent.

**Type 2 byte unsigned (0...65,535)**

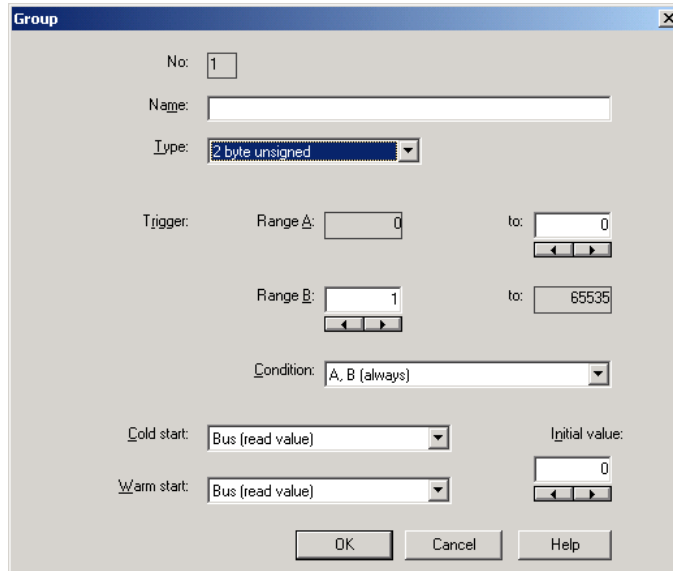


Fig. 146: Parameter window: "Group, Data type 2 byte unsigned (0...65,535)"

**Object value (0...65,535)**

Options: 0...65,535

This parameter is used to select which object value is sent.

**Type 2 byte signed (-32,768...32,767)**

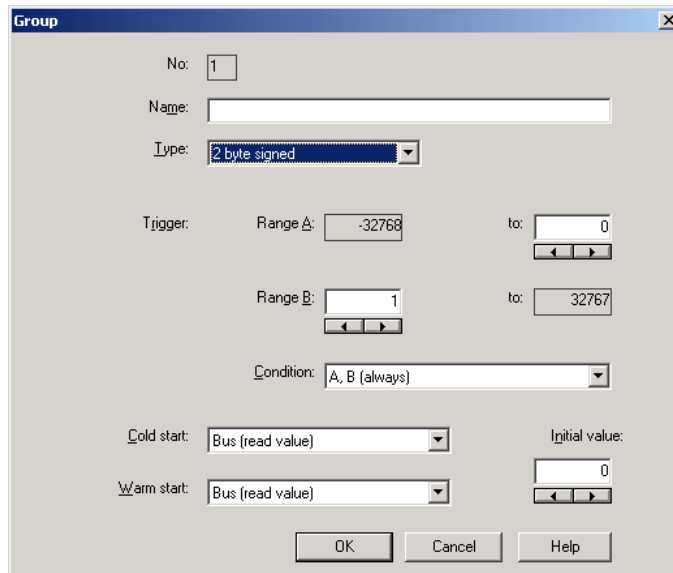


Fig. 147: Parameter window: "Group, Data type 2 byte signed (-32,768...32,767)"

**Object value (-32,768...32,767)**

Options: -32,768...0...32,767

This parameter is used to select which object value is sent.

Type 2 byte floating point

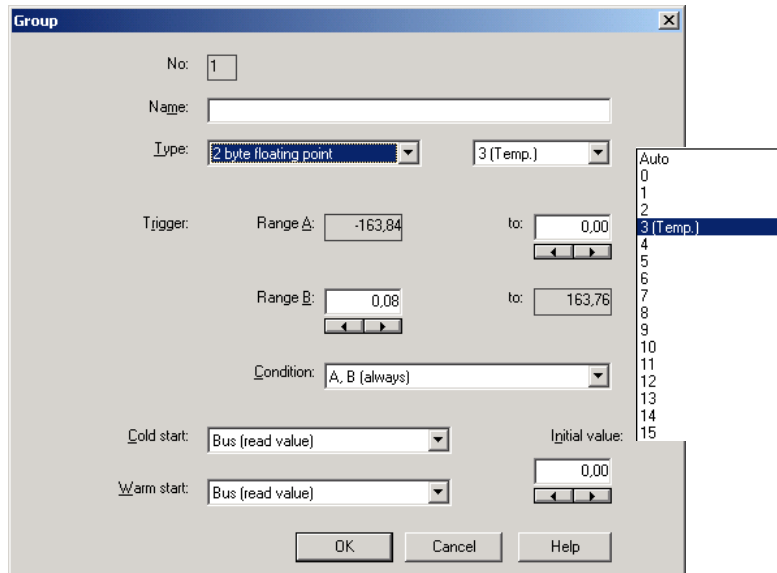


Fig. 148: Parameter window: "Group, Data type 2 byte floating point"

**Object value (-163.84...163.76) and Exponent 3 (Temp.)**

Options: -163.84...0...163.76

This parameter is used to select which object value is sent.

**Exponent**

Options:            Auto /  
                          0...3 (Temp.)...15

This parameter is used to select which exponent is assigned to the object value.

Note:                Different object values can be set, depending on the exponent which is selected. The table below shows all the options.

Exponent	Object value
Auto	-671,088.64...0.00...670,760.96
0	-20.48...0.00...20.47
1	-40.96...0.00...40.94
2	-81.92...0.00...81.88
3 (Temp.)	-163.84...0.00...163.76
4	-327.68...0.00...327.52
5	-655.36...0.00...655.04
6	-1,310.72...0.00...1,310.08
7	-2,621.44...0.00...2,620.16
8	-5,242.88...0.00...5,240.32
9	-10,485.76...0.00...10,480.64
10	-20,971.52...0.00...20,961.28
11	-41,943.04...0.00...41,922.56
12	-88,386.08...0.00...83,845.12
13	-167,772.16...0.00...167,690.24
14	-335,544.32...0.00...335,380.48
15	-671,088.64...0.00...670,760.96

Table 10:    Exponent

**Condition**

Options:            A, B (always) /  
                         >A, >B (new entry) /  
                         A<>B (hysteresis)

The conditions for triggering a group are defined under *Condition*.

**Option: A, B (always)**

The entry *A, B (always)* means that the group is always triggered if the trigger value lies in the range A or B. If e.g. a telegram would be received several times with the same value or with values in the same range, the group would be triggered after each transmission.

If the temperature value of 21 °C is transmitted several times in succession, the group is activated each time and telegrams are thus sent each time to open the blinds and to switch off the air conditioning and lighting.

**Option: >A, >B (new entry)**

The entry *>A, >B (new entry)* means that the group is only triggered if the trigger value is located firstly in *Range A* or *Range B*. If the same value is sent several times to the Application Unit Time ABZ/S 2.1, the group is only triggered on the first transmission.

If the group was finally triggered by the transmission of a temperature value in *Range A*, e.g. 21 °C, then values were sent outside *Range A* e.g. 23 °C and then again a value in *Range A* such as 21 °C, the initial transmission of the value 21 °C activates the group and telegrams are sent to open the blinds and to switch off the air conditioning and lighting.



**Option: A < > B (hysteresis)**

The entry *A < > B* (*hysteresis*) means that the group is only triggered if the trigger value is first located in *Range A* and the last triggering is carried out by a value in *Range B* or if the trigger value is first located in *Range B* and the last triggering is carried out by a value in *Range A*.

If the group was last triggered by the transmission of a value in *Range A*, e.g. 21 °C (the group is thereby activated e.g. to switch on the heating) and then values outside *Range A* have been transferred e.g. 23 °C followed by another value in *Range A* such as 21 °C, the group is no longer triggered by this value. The group can only be retriggered if a value is transmitted which lies in *Range B* i.e. above 24 °C (the group is thereby deactivated e.g. to switch off the heating).

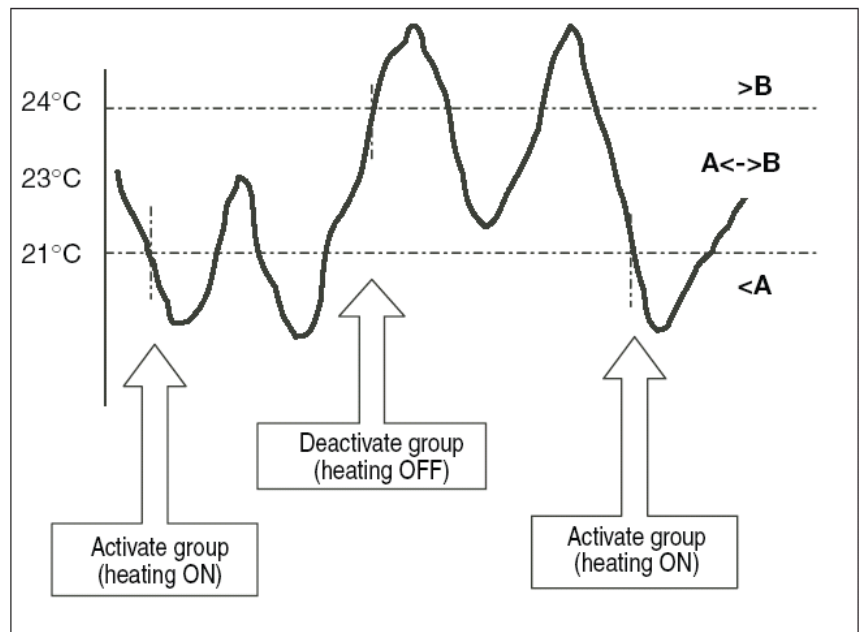


Fig. 149: Example: Hysteresis, Group activated/deactivated

**Cold start**

Options:            Bus (read value) /  
                          Init (use initial value) /  
                          none (no reaction)

The behaviour of the Application Unit Time on bus voltage recovery is defined under *Cold start*.

Information that is currently stored in the Application Unit Time e.g. Group 1 triggered, is stored for at least 1 h on bus voltage failure. If the bus voltage failure lasts for longer than 1 h, the Application Unit Time automatically detects whether the information is still stored or whether there has been a data loss. The application program and the parameters are permanently stored in the Application Unit Time.

In the event of a data loss, the Application Unit Time carries out a so-called cold start on bus voltage recovery i.e. it can no longer access the stored data and must either work with preset data or read relevant data from other bus devices.

It should further be noted that the time switch program does not start automatically after a cold start as the current time or date are no longer available. See also *Internal clock*.

It can be defined how the Application Unit Time should react in the event of a cold start.

**Option: Bus (read value)**

After bus voltage recovery, the Application Unit Time reads out the relevant data from other bus devices. Depending on the value received and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**Option: Init (use initial value)**

The Application Unit Time uses preset values after bus voltage recovery. Depending on the preset values and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**What is the initial value?**

If the Application Unit Time should use a preset value after a bus voltage recovery with data loss i.e. after a cold start, this value is listed under *Initial value*.

**Option: none (no reaction)**

The Application Unit Time only triggers a group if a telegram with a value in *Range A* or *Range B* has been received.

The group is always triggered in principle after a cold start on receipt of the first value which lies in *Range A* or *Range B*.

**Warm start**

Options:            Bus (read value) /  
                       RAM (old value) /  
                       none (no reaction)

The behaviour of the Application Unit Time on bus voltage recovery is defined under *Warm start*.

Information that is currently stored in the Application Unit Time e.g. Group 1 triggered, is stored for at least 1 h on bus voltage failure. If the bus voltage failure lasts for longer than 1 h, the Application Unit Time automatically detects whether the information is still stored or whether there has been a data loss. The application program and the parameters are permanently stored in the Application Unit Time.

If the stored data is still available, the Application Unit Time carries out a so-called warm start on bus voltage recovery i.e. it can work with the stored data but it can also use preset data or read relevant data from other bus devices.

It can be defined how the Application Unit Time should react in the event of a warm start.

**Option: Bus (read value)**

After a bus voltage recovery, the Application Unit Time reads out the relevant data from other bus devices. Depending on the value received and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

In the event of a warm start, a group e.g. is no longer triggered if this group was already activated in *Range A* and should be activated again in *Range A* after reading the other bus devices and the *Trigger* parameter is no longer set to *A, B (always)*.

**Option: RAM (old value)**

After a bus voltage recovery, the Application Unit Time uses the stored values. Depending on the stored values i.e. the state prior to the bus voltage failure and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**Option: none (no reaction)**

The Application Unit Time only triggers a group if a telegram with a value in *Range A* or *Range B* has been received.

The group is always triggered in principle after a cold start on receipt of the first value which lies in *Range A* or *Range B*.

In the event of a warm start, the group is only triggered if all other criteria have been met e.g. the last value received prior to the bus failure was in *Range B* and the first value received after bus voltage recovery is in *Range A*.

**Initial value**

Under *Initial value*, you define the value which the Application Unit Time should use as a preset value after a cold start. The field is dependent on the preset type e.g. if a 1-bit type has been selected, only the values 0 and 1 can be set.

**“Insert” button**

A new group is inserted via the *Insert* button.

**“Close” button**

The parameter window is closed via the *Close* button.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

### 3.4.9.3 Modify group

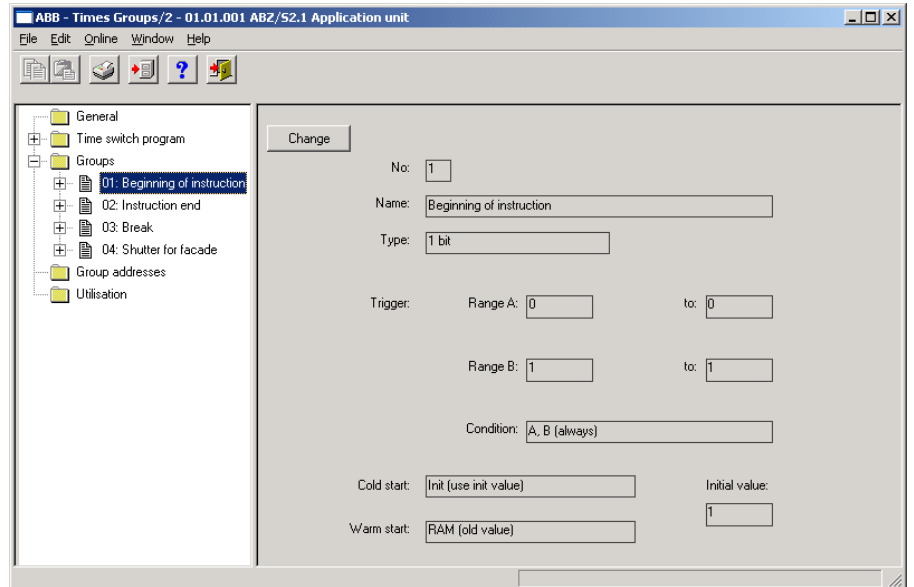


Fig. 150: Dialog window: "Modify group"

To modify a group, select *Groups* in the selection area followed by e.g. 01: Beginning of instruction.

The associated parameter window is activated in the right-hand button as well as the *Change* button.

#### "Change" button

The *Group* parameter window becomes visible by pressing the *Modify* button. The settings can be modified there.

The *Group* parameter window is activated in the following way:

- by clicking on the *Change* button.

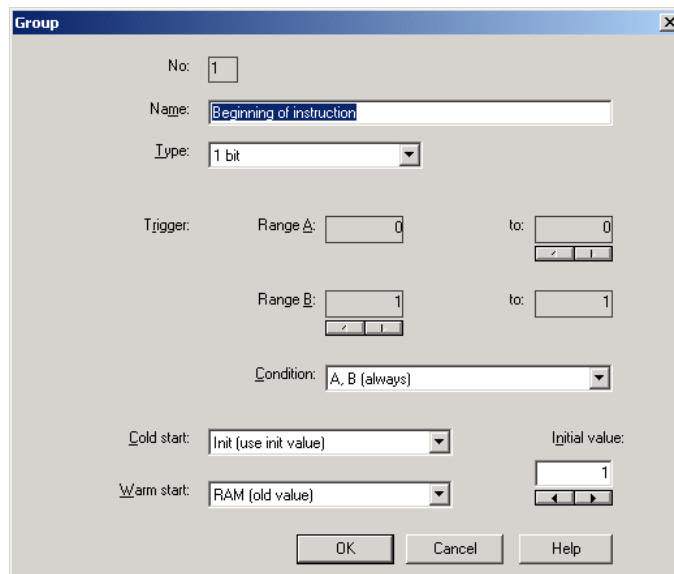


Fig. 151: Parameter window: "Select group"

The selected group is now available for editing.

### No.

The group number (*QU No.*) cannot be modified. It is automatically allocated by the application program Times Groups/2 and is a consecutive number for the unique identification of the group.

### Name

The group name (*QU Name*) can be modified. A maximum of 50 characters are available.

**Type**

Options:            1 bit /  
                         1 byte unsigned /  
                         1 byte signed /  
                         2 byte unsigned /  
                         2 byte signed /  
                         2 byte floating point

The *type* denotes which type of value is assigned to the trigger of a group (functional group) i.e. whether the group is triggered e.g. by a telegram with the binary value 1 or a telegram with the 1-byte value 128.

A group can be activated by a telegram with the group address of a group trigger of this group. Different types of values can be sent with a telegram e.g. 1-bit value i.e. binary values such as 0 and 1 or e.g. 1-byte values such as 0, 128 or 255, which can then be interpreted as 0%, 50% and 100%.

**Trigger**

The limits within which the values must lie to trigger the group are defined under *Trigger* for *Range A* and *Range B*. In the case of the 1-bit type, there are only the states 0 and 1. These values cannot be edited.

If a group is triggered by a *group trigger*, specific functions are activated e.g. switching the light on or off. The light can thereby be switched on in specific rooms e.g. by triggering a group with the value "0" and switched on in these rooms by triggering a group with the value "1" in these rooms. A group can therefore behave in a different way when triggered by the value "0" than by the value "1".

You could therefore also designate the triggering of a group by the value "1" as the activation of the group (functional group) and the triggering of the group by the value "0" as the deactivation of the group (functional group).

Binary values which trigger a group (functional group) can only adopt the values "0" and "1". If the group is triggered e.g. by a 1-byte value, the triggered values can lie in a range between 0...255 or between 0%...100%.

Value ranges can therefore be entered for the activation of a group and for the deactivation of a group.

**Range A, Range B**

*Range A* contains those values which activate or group or those values which trigger in *Range A* while *Range B* contains those values which deactivate a group or those values which trigger in *Range B*.

If a group is triggered e.g. by a 2-byte value with which the room temperature of a room is transmitted, the blinds could be opened e.g. by a temperature value under 22 °C and the air conditioning and lighting could be switched off. In the event of a temperature value above 24 °C, the blinds could be closed and the lighting and air conditioning could be switched on.

So that the group is not triggered each time e.g. after the multiple transmission of the same values i.e. to activate specific functions, further criteria for triggering the group can be defined.



Note: Different options appear in the *Trigger* parameter, depending on which type has been selected.

**Type 1 bit**

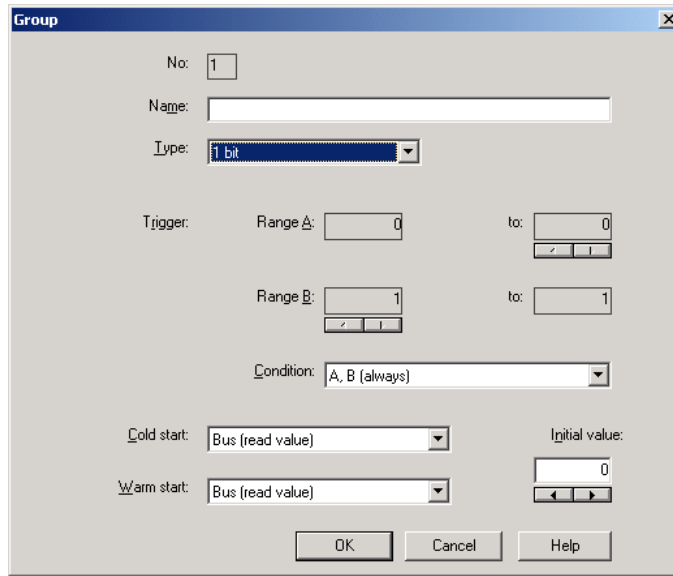


Fig. 152: Parameter window: "Group, Data type 1 bit"

**Object value (0...1)**

Options: 0/1

This parameter is used to select which object value is sent.

**Type 1 byte unsigned (0...255)**

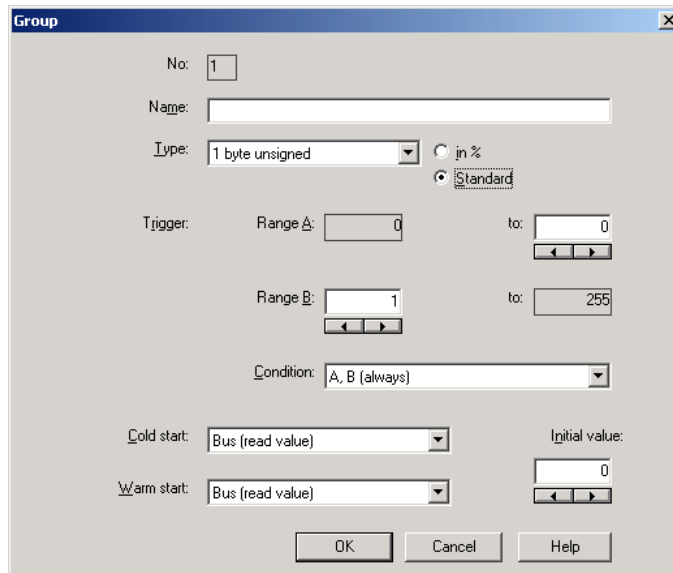


Fig. 153: Parameter window: "Group, Data type 1 byte unsigned (0...255)"

**Object value (0...255) and Standard**

Options: 0...255

This parameter is used to select which object value is sent.

If *Standard* is also selected, the object value is issued without a unit of measurement.

**Type 1 byte unsigned (0...100%)**

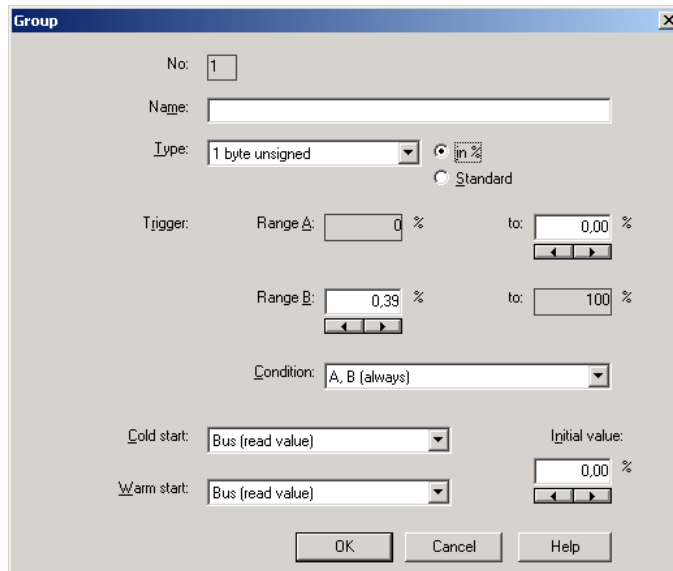


Fig. 154: Parameter window: "Group, Data type 1 byte unsigned (0...100%)"

**Object value (0...100%) and in %**

Options: 0.00...100%

This parameter is used to select which object value is sent.

If the option *in %* is also selected, 0 = 0% and 255 = 100% are assigned to the object values.

**Type 1 byte signed (-128...127)**

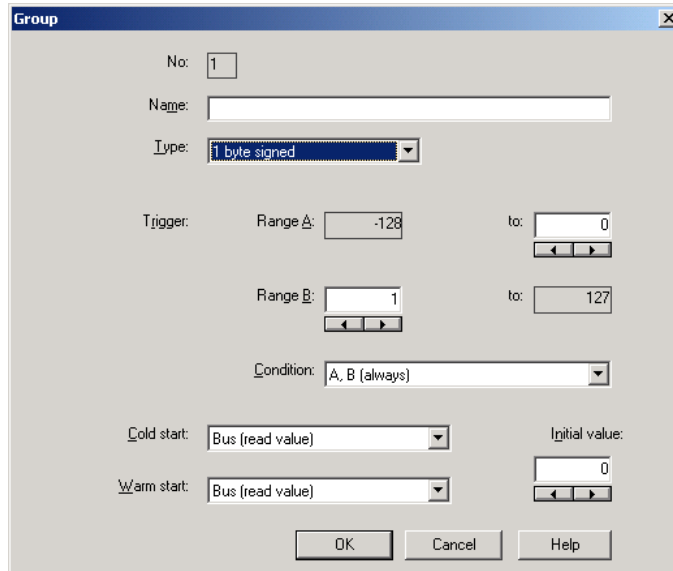


Fig. 155: Parameter window: "Group, Data type 1 byte signed (-128...127)"

**Object value (-128...127)**

Options: -128...0...127

This parameter is used to select which object value is sent.

**Type 2 byte unsigned (0...65,535)**

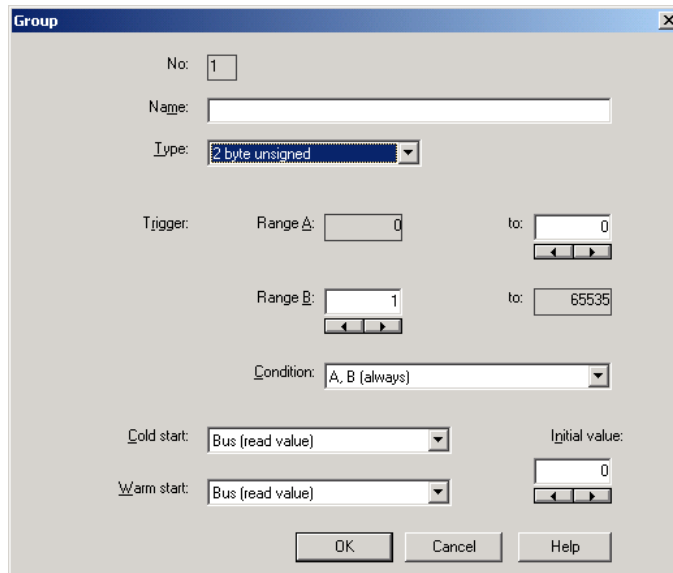


Fig. 156: Parameter window: "Group, Data type 2 byte unsigned (0...65,535)"

**Object value (0...65,535)**

Options: 0...65,535

This parameter is used to select which object value is sent.

**Type 2 byte signed (-32,768...32,767)**

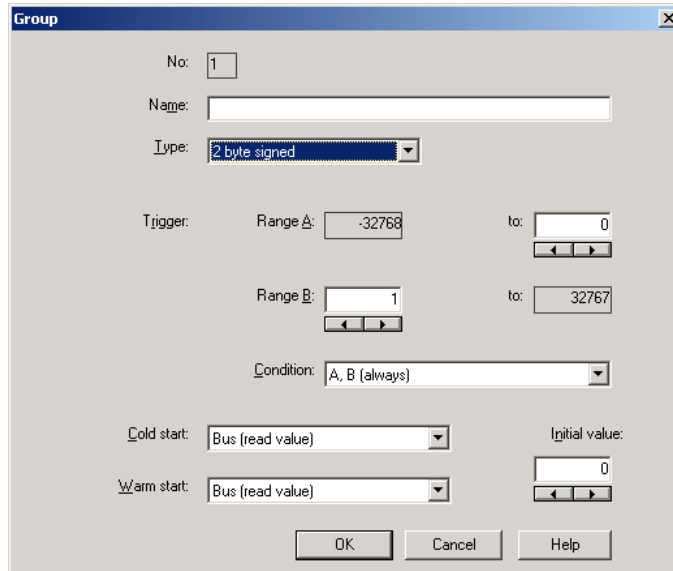


Fig. 157: Parameter window: "Group, Data type 2 byte signed (-32,768...32,767)"

**Object value (-32,768...32,767)**

Options: -32,768...0...32,767

This parameter is used to select which object value is sent.

Type 2 byte floating point

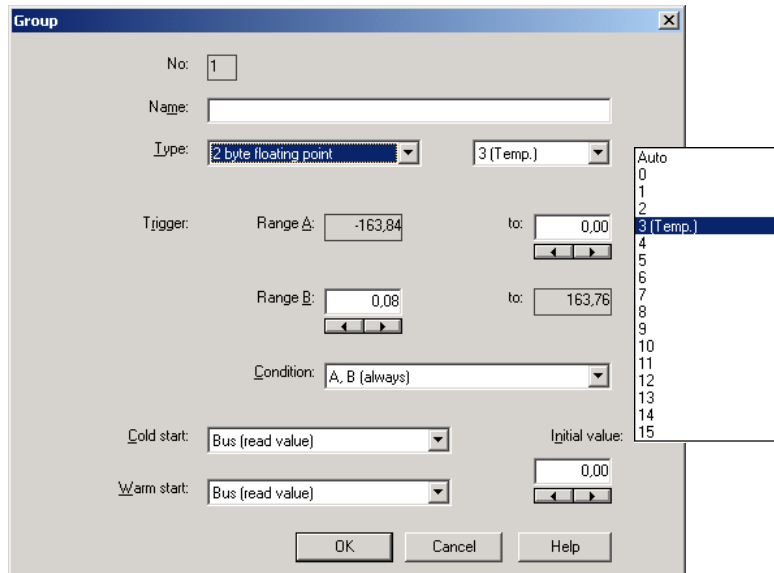


Fig. 158: Parameter window: "Group, Data type 2 byte floating point"

**Object value (-163.84...163.76) and Exponent 3 (Temp.)**

Options: -163.84...0...163.76

This parameter is used to select which object value is sent.

**Exponent**

Options:            Auto /  
                         0...3 (Temp.)...15

This parameter is used to select which exponent is assigned to the object value.

Note:                Different object values can be set, depending on the exponent which is selected. The table below shows all the options.

Exponent	Object value
Auto	-671,088.64...0.00...670,760.96
0	-20.48...0.00...20.47
1	-40.96...0.00...40.94
2	-81.92...0.00...81.88
3 (Temp.)	-163.84...0.00...163.76
4	-327.68...0.00...327.52
5	-655.36...0.00...655.04
6	-1,310.72...0.00...1,310.08
7	-2,621.44...0.00...2,620.16
8	-5,242.88...0.00...5,240.32
9	-10,485.76...0.00...10,480.64
10	-20,971.52...0.00...20,961.28
11	-41,943.04...0.00...41,922.56
12	-88,386.08...0.00...83,845.12
13	-167,772.16...0.00...167,690.24
14	-335,544.32...0.00...335,380.48
15	-671,088.64...0.00...670,760.96

Table 11:    Exponent



**Condition**

Options:            A, B (always) /  
                       >A, >B (new entry) /  
                       A<>B (hysteresis)

The conditions for triggering a group are defined under *Condition*.

**Option: A, B (always)**

The entry *A, B (always)* means that the group is always triggered if the trigger value lies in the range A or B. If e.g. a telegram would be received several times with the same value or with values in the same range, the group would be triggered after each transmission.

If the temperature value of 21 °C is transmitted several times in succession, the group is activated each time and telegrams are thus sent each time to open the blinds and to switch off the air conditioning and lighting.

**Option: >A, >B (new entry)**

The entry *>A, >B (new entry)* means that the group is only triggered if the trigger value is located firstly in *Range A* or *Range B*. If the same value is sent several times to the Application Unit Time ABZ/S 2.1, the group is only triggered on the first transmission.

If the group was finally triggered by the transmission of a temperature value in *Range A*, e.g. 21 °C, then values were sent outside *Range A* e.g. 23 °C and then again a value in *Range A* such as 21 °C, the initial transmission of the value 21 °C activates the group and telegrams are sent to open the blinds and to switch off the air conditioning and lighting.

**Option: A < > B (hysteresis)**

The entry *A < > B* (*hysteresis*) means that the group is only triggered if the trigger value is first located in *Range A* and the last triggering is carried out by a value in *Range B* or if the trigger value is first located in *Range B* and the last triggering is carried out by a value in *Range A*.

If the group was last triggered by the transmission of a value in *Range A*, e.g. 21 °C (the group is thereby activated e.g. to switch on the heating) and then values outside *Range A* have been transferred e.g. 23 °C followed by another value in *Range A* such as 21 °C, the group is no longer triggered by this value. The group can only be retriggered if a value is transmitted which lies in *Range B* i.e. above 24 °C (the group is thereby deactivated e.g. to switch off the heating).

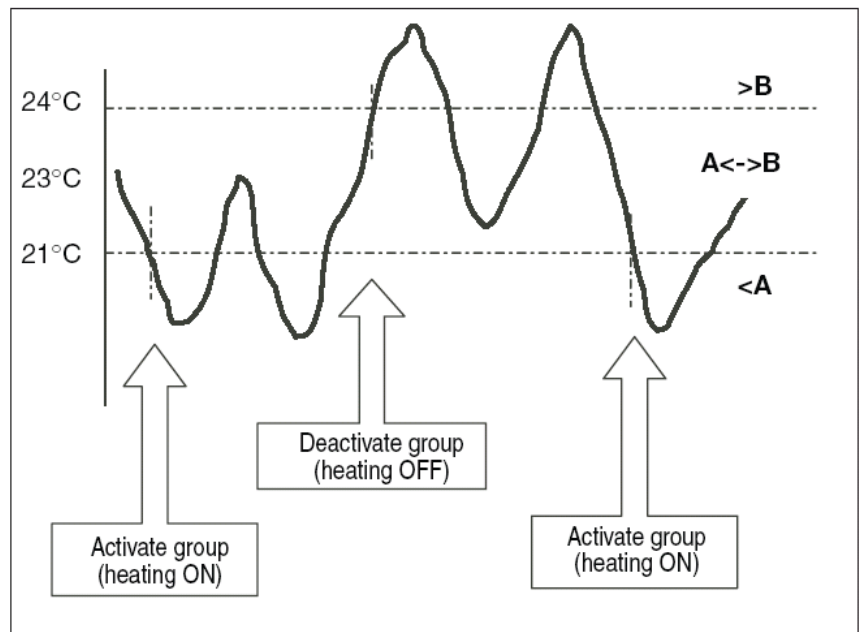


Fig. 159: Example: Hysteresis, Group activated/deactivated

**Cold start**

Options:            Bus (read value) /  
                          Init (use initial value) /  
                          none (no reaction)

The behaviour of the Application Unit Time on bus voltage recovery is defined under *Cold start*.

Information that is currently stored in the Application Unit Time e.g. Group 1 triggered, is stored for at least 1 h on bus voltage failure. If the bus voltage failure lasts for longer than 1 h, the Application Unit Time automatically detects whether the information is still stored or whether there has been a data loss. The application program and the parameters are permanently stored in the Application Unit Time.

In the event of a data loss, the Application Unit Time carries out a so-called cold start on bus voltage recovery i.e. it can no longer access the stored data and must either work with preset data or read relevant data from other bus devices.

It should further be noted that the time switch program does not start automatically after a cold start as the current time or date are no longer available. See also *Internal clock*.

It can be defined how the Application Unit Time should react in the event of a cold start.

**Option: Bus (read value)**

After bus voltage recovery, the Application Unit Time reads out the relevant data from other bus devices. Depending on the value received and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**Option: Init (use initial value)**

The Application Unit Time uses preset values after bus voltage recovery. Depending on the preset values and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**What is the initial value?**

If the Application Unit Time should use a preset value after a bus voltage recovery with data loss i.e. after a cold start, this value is listed under *Initial value*.

**Option: none (no reaction)**

The Application Unit Time only triggers a group if a telegram with a value in *Range A* or *Range B* has been received.

The group is always triggered in principle after a cold start on receipt of the first value which lies in *Range A* or *Range B*.

**Warm start**

Options:            Bus (read value) /  
                      RAM (old value) /  
                      none (no reaction)

The behaviour of the Application Unit Time on bus voltage recovery is defined under *Warm start*.

Information that is currently stored in the Application Unit Time e.g. Group 1 triggered, is stored for at least 1 h on bus voltage failure. If the bus voltage failure lasts for longer than 1 h, the Application Unit Time automatically detects whether the information is still stored or whether there has been a data loss. The application program and the parameters are permanently stored in the Application Unit Time.

If the stored data is still available, the Application Unit Time carries out a so-called warm start on bus voltage recovery i.e. it can work with the stored data but it can also use preset data or read relevant data from other bus devices.

It can be defined how the Application Unit Time should react in the event of a warm start.

**Option: Bus (read value)**

After a bus voltage recovery, the Application Unit Time reads out the relevant data from other bus devices. Depending on the value received and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

In the event of a warm start, a group e.g. is no longer triggered if this group was already activated in *Range A* and should be activated again in *Range A* after reading the other bus devices and the *Trigger* parameter is no longer set to *A, B (always)*.

**Option: RAM (old value)**

After a bus voltage recovery, the Application Unit Time uses the stored values. Depending on the stored values i.e. the state prior to the bus voltage failure and the criteria for triggering the group, it either triggers the group in *Range A* or *Range B* or it does not trigger the group.

**Option: none (no reaction)**

The Application Unit Time only triggers a group if a telegram with a value in *Range A* or *Range B* has been received.

The group is always triggered in principle after a cold start on receipt of the first value which lies in *Range A* or *Range B*.

In the event of a warm start, the group is only triggered if all other criteria have been met e.g. the last value received prior to the bus failure was in *Range B* and the first value received after bus voltage recovery is in *Range A*.

**Initial value**

Under *Initial value*, you define the value which the Application Unit Time should use as a preset value after a cold start. The field is dependent on the preset type e.g. if a 1-bit type has been selected, only the values 0 and 1 can be set.

**“Insert” button**

A new group is inserted via the *Insert* button.

**“Close” button**

The parameter window is closed via the *Close* button.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

### 3.4.10 Group trigger - General

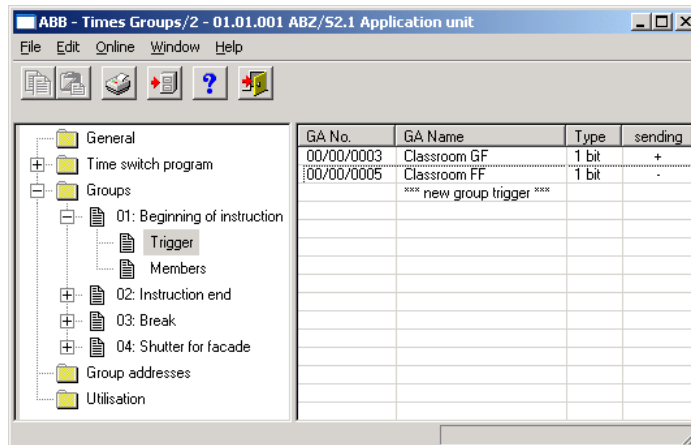


Fig. 160: Dialog window: "Group trigger - General"

The created triggers are shown in the folder *Groups*, *01: Beginning of instruction* and *Trigger*.

*Group triggers* trigger a group if

- the Application Unit Time receives a telegram whose group address has been entered in the list of group triggers
- its value lies in the ranges which have been defined for triggering a group and
- its value meets the criteria for triggering a group.

When triggering a group through the time switch program of the Application Unit Time, the time switch program sends a telegram with a group address which is simultaneously received by the Application Unit Time and thus triggers the group.

### 3.4.10.1 Insert new group trigger

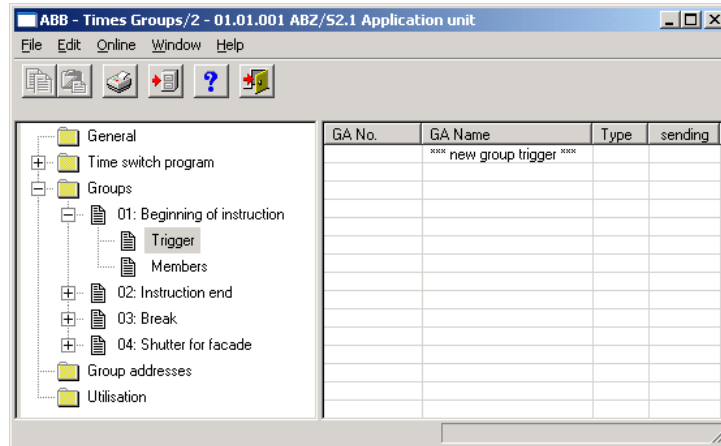


Fig. 161: Dialog window: "Insert new group trigger"

To insert a group trigger, select *Groups, 01: Beginning of instruction* and *Trigger* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type** and **sending**.

The meaning of the individual columns is as follows:

#### **GA No.**

The *number* of the group address is the unique identifier of a group address.

#### **GA Name**

The *name* of the group address is displayed here.

#### **Type**

The *type* indicates which type of values a telegram with this group address can send.

#### **sending**

A + indicates that this group address is sent.

A – indicates that this group address is not sent.

Note: Only one group address can be set as sending for a group.

The dialog window *Trigger for group 01: Beginning of instruction* is activated in the following way:

- by double-clicking on *\*\*\* new group trigger \*\*\** or
- by pressing the right mouse button and selecting *New group trigger* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *New group trigger* in the pop-up menu.

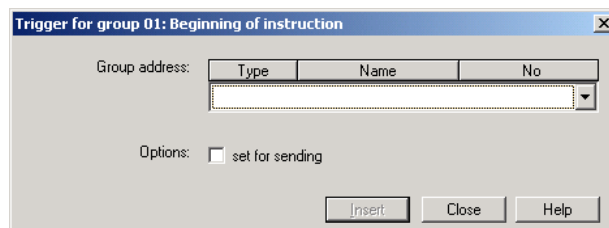


Fig. 162: Parameter window: "Trigger for group 01: Beginning of instruction, Insert group address"

### Group address

Options:            new group address

The parameter is divided into **Type**, **Name** and **No**. The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Name

The *name* of the group address is defined during the parameterisation of the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

#### No.

The *number* of the group address is the unique identifier of a group address.



After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

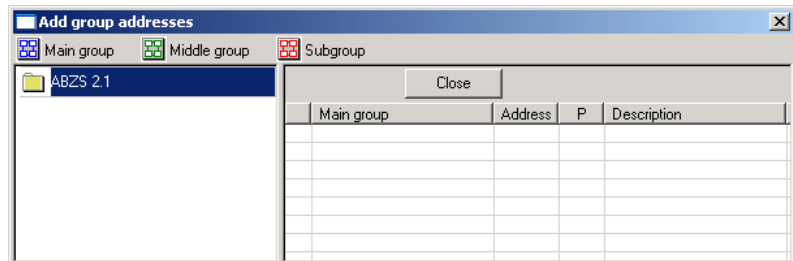


Fig. 163: Dialog window: "Group trigger, Insert group addresses"

The main group, middle group and the subgroup are created in sequence via drag & drop.

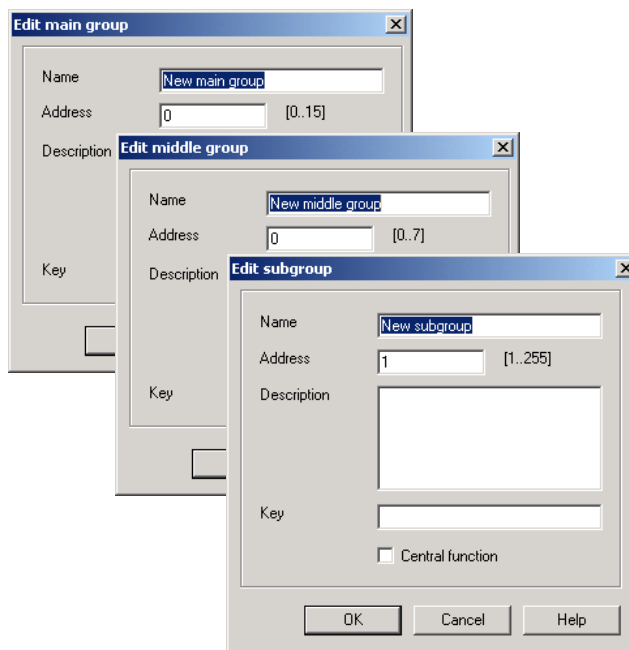


Fig. 164: Parameter window: "Group trigger, Create main group, middle group and subgroup"

**Note:** The function descriptions and screenshots of the application program in this product manual all relate to ETS3. The application program for ETS4 has now become available.

The only difference between both program versions is the number of possible main groups:  
 ETS3 = up to 15 main groups  
 ETS4 = up to 31 main groups

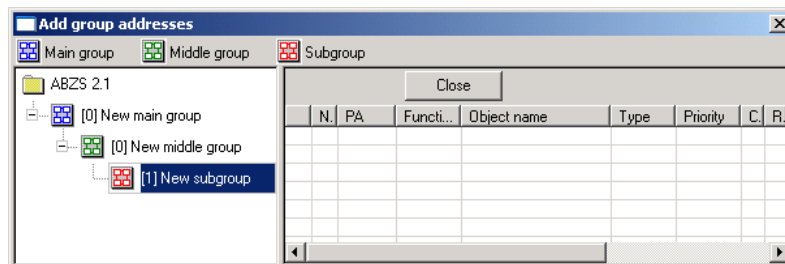


Fig. 165: Dialog window: "Group trigger, Main group, middle group and subgroup created"

By marking *New middle group* in the left-hand window, the newly created group address is visible in the right-hand window.

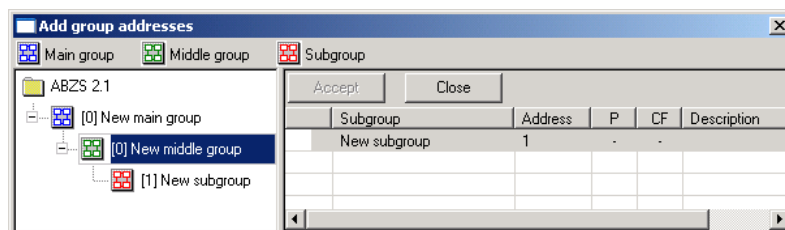


Fig. 166: Dialog window: "Group trigger, Middle group marked"

The *Accept* button is activated by clicking on the group address in the right-hand window.

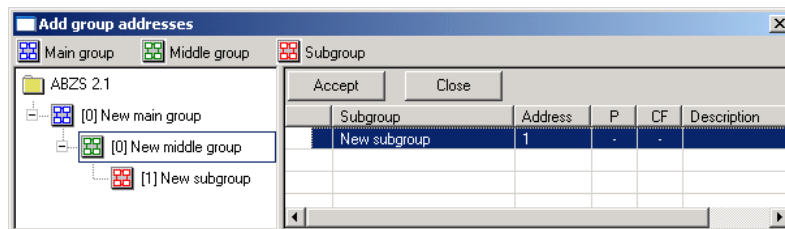


Fig. 167: Dialog window: "Group trigger, Subgroup marked"

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

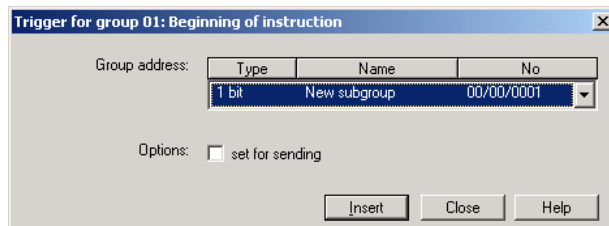


Fig. 168: Parameter window: "Group trigger, Group address inserted"

The *new group address* is always of type 1 bit.

### Options

Via the option *set for sending*, it is defined that a telegram with this group address is sent when triggering a group via the time switch program of the Application Unit Time. It can thus be displayed e.g. in a visualisation program that this group has been triggered.

Note: Only one group address can be set as sending for a group.

### "Insert" button

A new group trigger is inserted via the *Insert* button.

### "Close" button

The parameter window is closed via the *Close* button.

### "Help" button

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

## 3.4.10.2 Edit group trigger

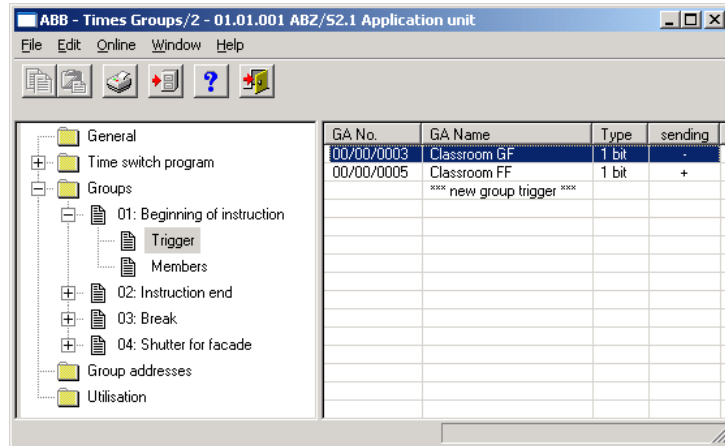


Fig. 169: Dialog window: "Edit group trigger"

To edit a group trigger, select *Groups, 01: Beginning of instruction* and *Trigger* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type** and **sending**.

The meaning of the individual columns is as follows:

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**sending**

A + indicates that this group address is sent.

A – indicates that this group address is not sent.

Note: Only one group address can be set as sending for a group.

Select an existing trigger e.g. the group address 00/00/002. The dialog window for the selected *Trigger for group 01: Beginning of instruction* is activated in the following way:

- by double-clicking on the selected trigger or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

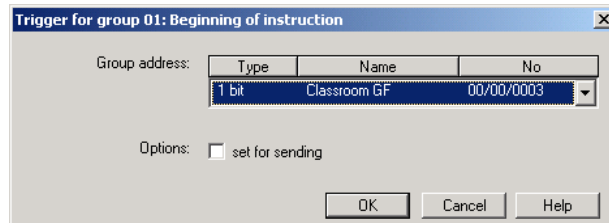


Fig. 170: Parameter window: "Edit group trigger"

The selected trigger dialog is now available for editing.

### Group address

Options: existing group addresses /  
new group address

An *existing group address* can be assigned in the selection list.

The parameter is divided into **Type**, **Name** and **No**. The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Name

The *name* of the group address is defined when configuring the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

#### No.

The *number* of the group address is the unique identifier of a group address.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

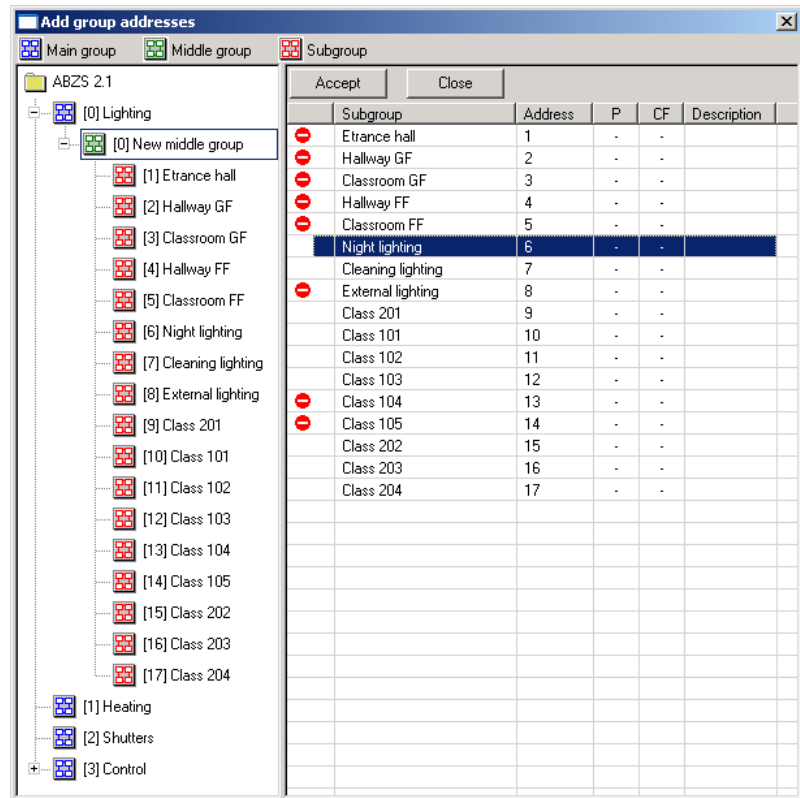


Fig. 171: Dialog window: "Group trigger, Select group address"

New group addresses can be created by dragging & dropping main groups, middle groups and subgroups.

The *Accept* button is activated by clicking on the new group address in the right-hand window.

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

The dialog window is closed after pressing the *Accept* button.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

**Options**

Via the option *set for sending*, it is defined that a telegram with this group address is sent when triggering a group via the time switch program of the Application Unit Time. It can thus be displayed e.g. in a visualisation program that this group has been triggered.

Note: Only one group address can be set as sending for a group.

**“OK” button**

When the “OK” button is pressed, the settings are adopted and the parameter window closes.

**“Cancel” button**

When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

## 3.4.10.3 Delete group trigger

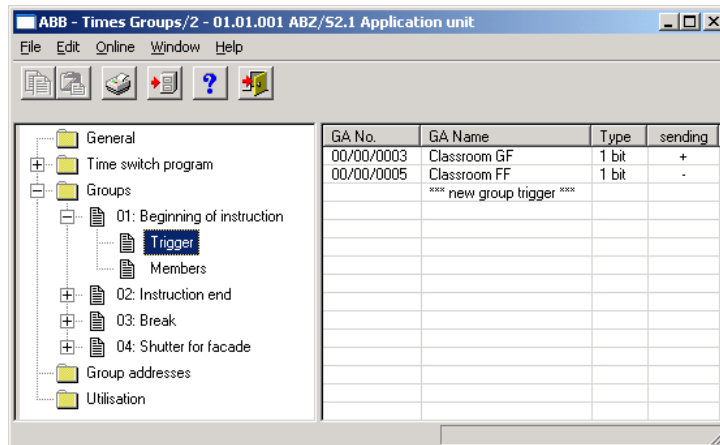


Fig. 172: Dialog window: "Delete group trigger"

To delete a group trigger, select *Groups, 01: Beginning of instruction* and *Trigger* in the selection area.

The table is divided into **GA No.**, **GA Name**, **Type** and **sending**.

The meaning of the individual columns is as follows:

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**sending**

A + indicates that this group address is sent.

A – indicates that this group address is not sent.

Note: Only one group address can be set as sending for a group.



Select the group address which should be deleted e.g. GA No. 00/00/002.

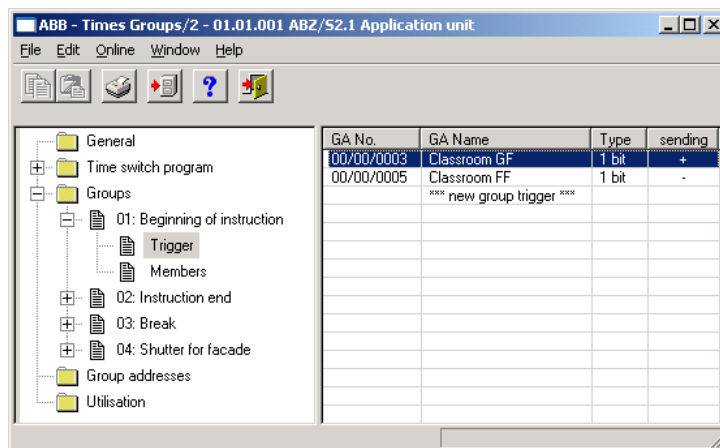


Fig. 173: Dialog window: "Select group trigger"

The selected group address is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *Delete* in the pop-up menu.

#### "Yes" button

Before the group trigger can be deleted, a prompt must be confirmed with Yes.

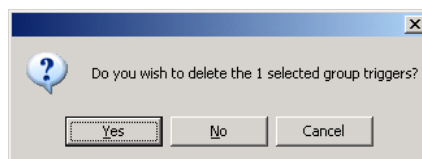


Fig. 174: Parameter window: "Group trigger, Prompt"

#### "No" button

The group trigger is not deleted when the *No* button is pressed.

#### "Cancel" button

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

3.4.11 Group members - General

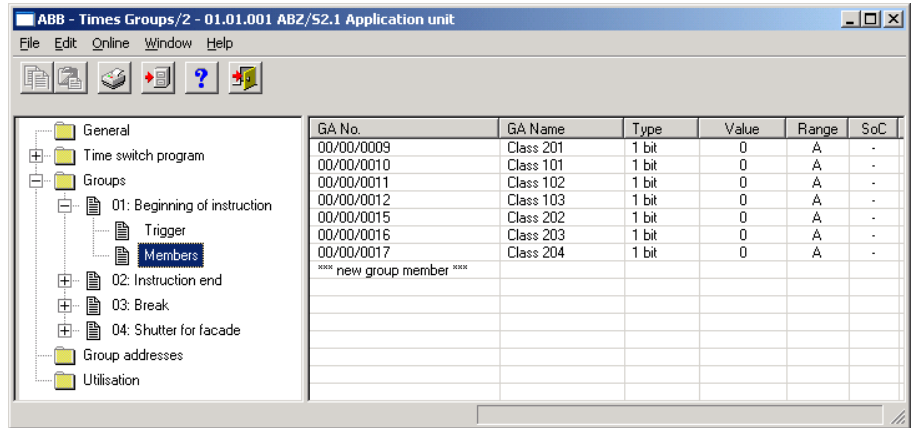


Fig. 175: Dialog window: "Group members - General"

The created members are shown in the folder *Groups, 01: Beginning of instruction* and *Members*.

This table lists all the group addresses which are members of this group.

## 3.4.11.1 Insert new group member

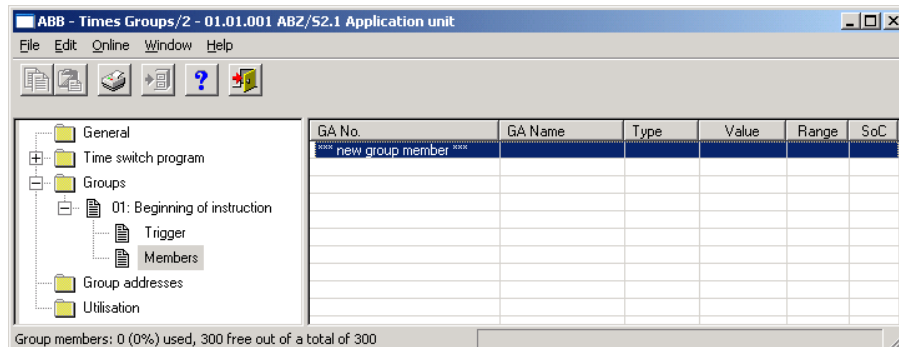


Fig. 176: Dialog window: "Insert new group member"

To insert a group member, select *Groups, 01: Beginning of instruction* and *Members* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **Value**, **Range** and **SoC**.

The meaning of the individual columns is as follows:

#### GA No.

The *number* of the group address is the unique identifier of a group address.

#### GA Name

The *name* of the group address is displayed here.

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Value

The value which is transmitted when triggering the group with this group address is displayed under *Value*.

**Range**

The entry under *Range* defines whether this value is transmitted when triggering the group in range A or range B.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

The dialog window *Member of group 01* is activated in the following way:

- by double-clicking on **\*\*\* new group member \*\*\*** or
- by pressing the right mouse button and selecting *New group member* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *New group member* in the pop-up menu.

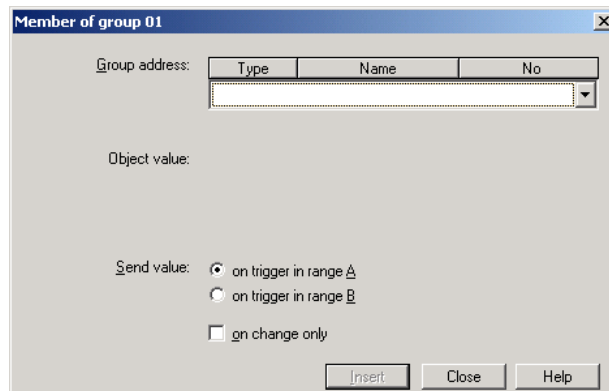


Fig. 177: Parameter window: "Insert member of group 01"

### Group address

Options:            new group address

The parameter is divided into **Type**, **Name** and **No**. The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Name

The *name* of the group address is defined when configuring the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

#### No.

The *number* of the group address is the unique identifier of a group address.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

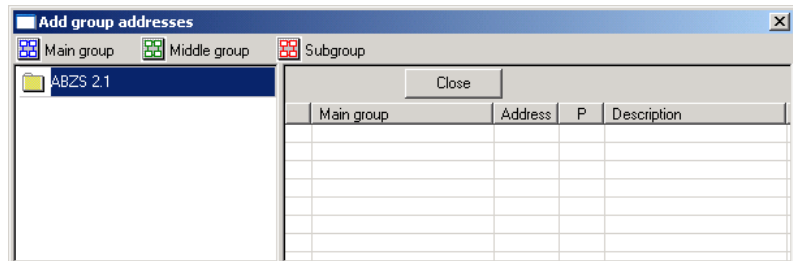


Fig. 178: Dialog window: "Group member, Add group addresses"

The main group, middle group and the subgroup are created in sequence via drag & drop.

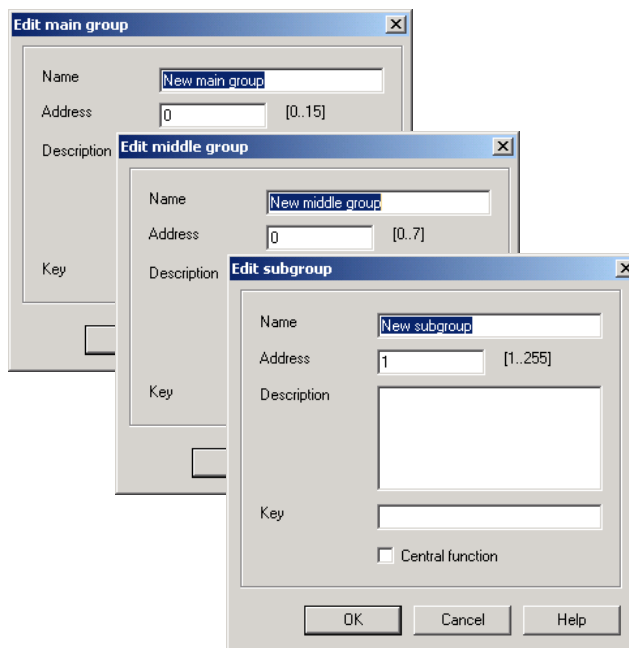


Fig. 179: Parameter window: "Group member, Create new main group, middle group and subgroup"

**Note:** The function descriptions and screenshots of the application program in this product manual all relate to ETS3. The application program for ETS4 has now become available.

The only difference between both program versions is the number of possible main groups:  
 ETS3 = up to 15 main groups  
 ETS4 = up to 31 main groups

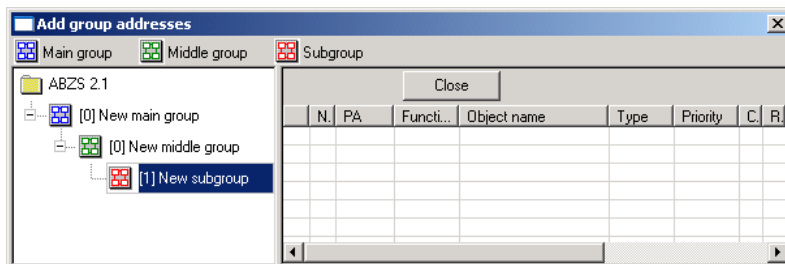


Fig. 180: Dialog window: "Group member, Main group, middle group and subgroup created"

By marking *New middle group* in the left-hand window, the newly created group address is visible in the right-hand window.

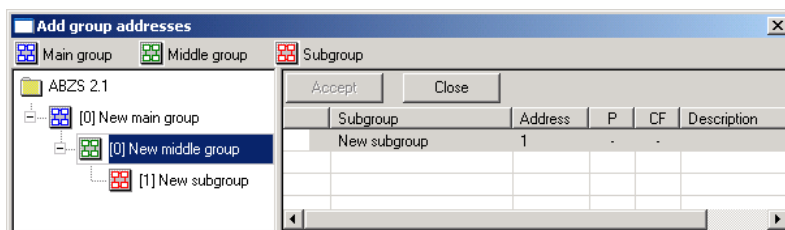


Fig. 181: Dialog window: "Group member, Middle group marked"

The *Accept* button is activated by clicking on the group address in the right-hand window.

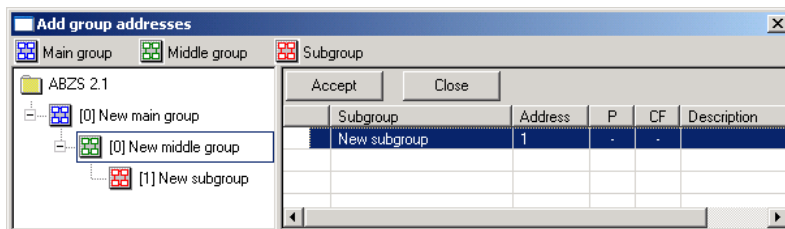


Fig. 182: Dialog window: "Group member, Subgroup marked"

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

After pressing the *Accept* button, a further dialog window *Group address* becomes active. The *data type* for the newly created group address is selected in this window.

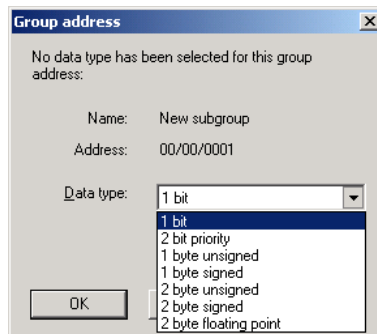


Fig. 183: Parameter window: "Group member, Select data type"

#### **"OK" button**

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.



Note: Different options appear in the *Object value* parameter depending on the type which has been selected for the group address.

### Type 1 bit

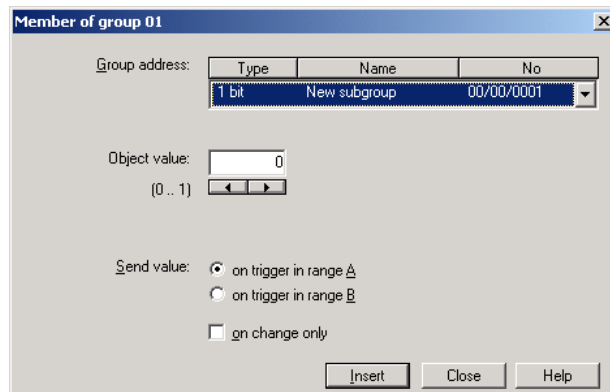


Fig. 184: Parameter window: "Group member, Data type 1 bit"

### Object value (0...1)

Options: 0/1

This parameter is used to select which object value is sent.

**Type 2 bit priority**

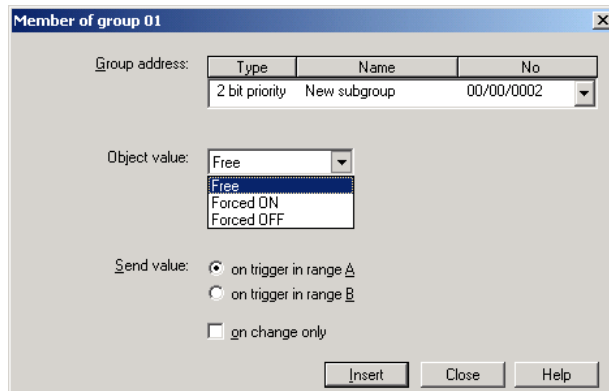


Fig. 185: Parameter window: "Group member, Data type 2 bit priority"

**Object value**

Options: Free/  
Forced ON/  
Forced OFF

This parameter is used to select which object value is sent. The priority control function is explained in the following table:

Bit 1	Bit 0	Access	Description
0	0	Free	The priority object has enabled e.g. the switch actuator. The output switches depending on the value of the switch object.
0	1	Free	
1	0	OFF	The priority object has switched e.g. the switch actuator OFF with priority control. The switch object has no function.
1	1	ON	The priority object has switched e.g. the switch actuator ON with priority control. The switch object has no function.

Table 12: Priority object

**Note:** 4 different values can be sent with the telegram. So-called priority objects can thus be addressed in the EIB devices. If a channel e.g. in a switch actuator should switch on or off, the value 1 or 0 is sent to the assigned switch object. If a priority object is also assigned to this channel, the value that was sent to the priority object defines the behaviour of the channel.

**Type 1 byte unsigned (0...255)**

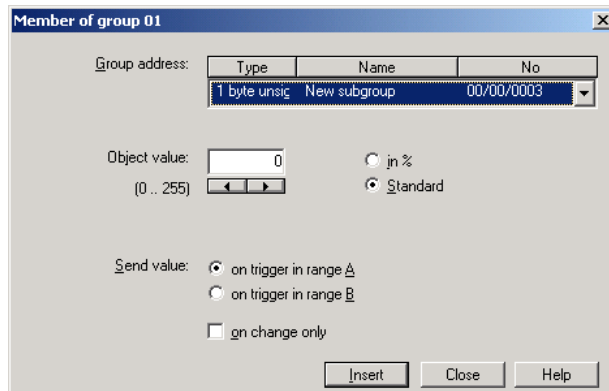


Fig. 186: Parameter window: "Group member, Data type 1 byte unsigned (0...255)"

**Object value (0...255) and Standard**

Options: 0...255

This parameter is used to select which object value is sent.

If *Standard* is also selected, the object value is issued without a unit of measurement.

**Type 1 byte unsigned (0...100%)**

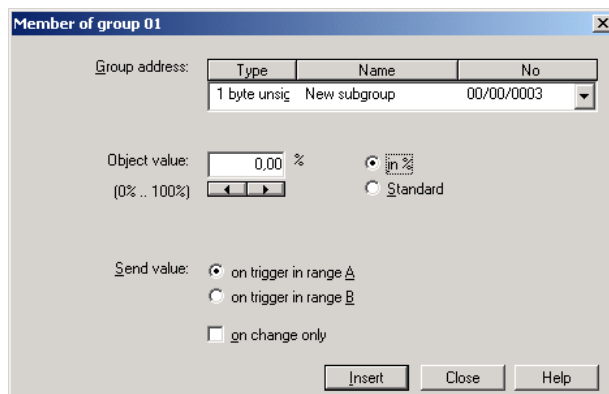


Fig. 187: Parameter window: "Group member, Data type 1 byte unsigned (0...100%)"

**Object value (0...100%) and in %**

Options: 0,00...100%

This parameter is used to select which object value is sent.

If the option *in %* is also selected, 0 = 0% and 255 = 100% are assigned to the object values.

**Type 1 byte signed (-128...127)**

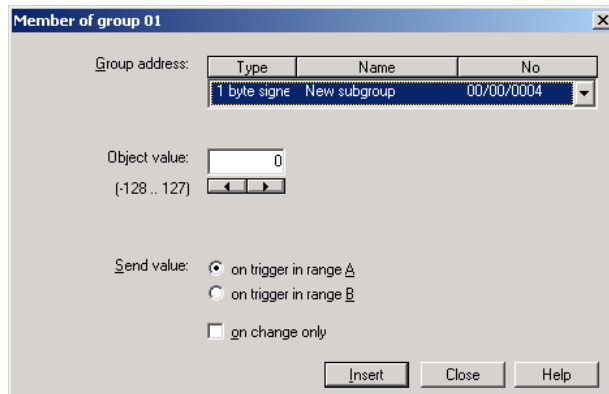


Fig. 188: Parameter window: "Group member, Data type 1 byte signed (-128...127)"

**Object value (-128...127)**

Options: -128...0...127

This parameter is used to select which object value is sent.

**Type 2 byte unsigned (0...65,535)**

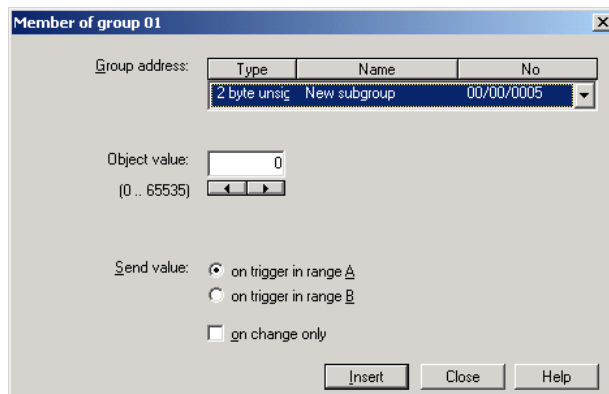


Fig. 189: Parameter window: "Group member, Data type 2 byte unsigned (0...65,535)"

**Object value (0...65,535)**

Options: 0...65,535

This parameter is used to select which object value is sent.

**Type 2 byte signed (-32,768...32,767)**

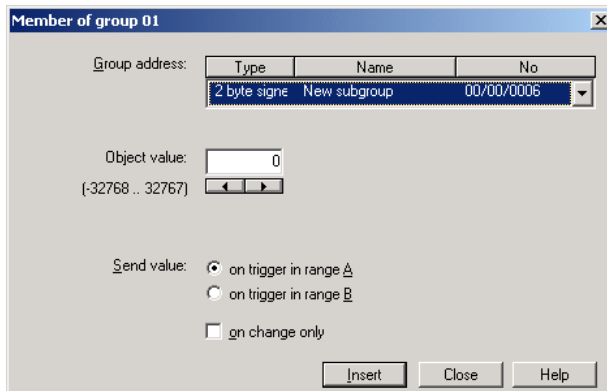


Fig. 190: Parameter window: "Group member, Data type 2 byte signed (-32,768...32,767)"

**Object value (-32,768...32,767)**

Options: -32,768...0...32,767

This parameter is used to select which object value is sent.

**Type 2 byte floating point**

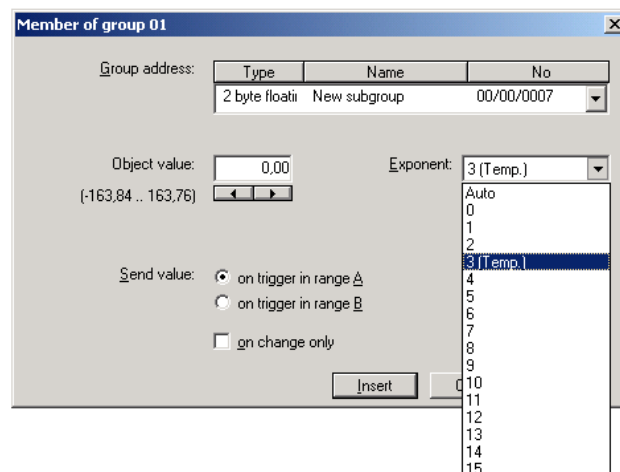


Fig. 191: Parameter window: "Group member, Data type 2 byte floating point"

**Object value (-163.84...163.76) and Exponent 3 (Temp.)**

Options: -163.84...0...163.76

This parameter is used to select which object value is sent.

**Exponent**

Options:            Auto /  
                         0...3 (Temp.)...15

This parameter is used to select which exponent is assigned to the object value.

Note:                Different object values can be set, depending on the exponent which is selected. The table below shows all the options.

Exponent	Object value
Auto	-671,088.64...0.00...670,760.96
0	-20.48...0.00...20.47
1	-40.96...0.00...40.94
2	-81.92...0.00...81.88
3 (Temp.)	-163.84...0.00...163.76
4	-327.68...0.00...327.52
5	-655.36...0.00...655.04
6	-1,310.72...0.00...1,310.08
7	-2,621.44...0.00...2,620.16
8	-5,242.88...0.00...5,240.32
9	-10,485.76...0.00...10,480.64
10	-20,971.52...0.00...20,961.28
11	-41,943.04...0.00...41,922.56
12	-88,386.08...0.00...83,845.12
13	-167,772.16...0.00...167,690.24
14	-335,544.32...0.00...335,380.48
15	-671,088.64...0.00...670,760.96

Table 13:    Exponent

**Send value**

Options:            on trigger in range A /  
                         on trigger in range B

The value which should be sent can be defined for each range via the option *on trigger in range A* or *on trigger in range B*.

**only on change**

A tick in the entry *only on change* means that a telegram is only sent if the value has changed e.g. if the light was already switched on and should still be switched on, this telegram is not sent.

**“Insert” button**

A new group member is inserted via the *Insert* button.

**“Close” button**

The parameter window is closed via the *Close* button.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

## 3.4.11.2 Edit group members

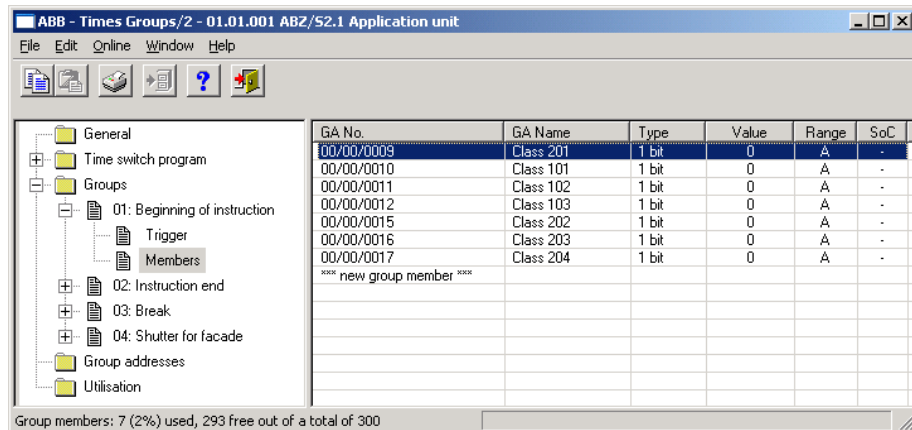


Fig. 192: Dialog window: "Edit group members"

To edit group members, select *Groups*, *01: Beginning of instruction* and *Members* in the selection area

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **Value**, **Range** and **SoC**.

The meaning of the individual columns is as follows:

#### GA No.

The *number* of the group address is the unique identifier of a group address.

#### GA Name

The *name* of the group address is displayed here.

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Value

The value which is transmitted when triggering the group with this group address is displayed under *Value*.



**Range**

The entry under *Range* defines whether this value is transmitted when triggering the group in range A or range B.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

Select an existing member e.g. the group address 00/00/009. The dialog window for the selected *Member of group 01* is activated in the following way:

- by double-clicking on the selected member or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

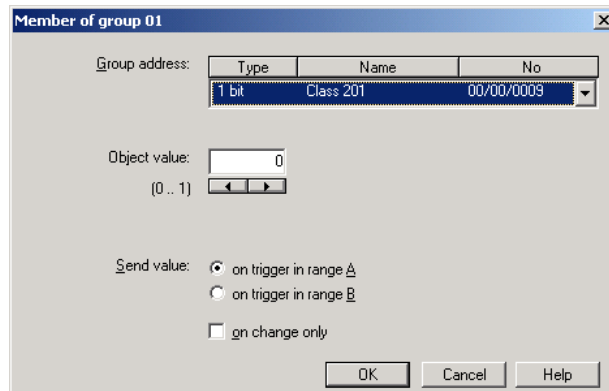


Fig. 193: Parameter window: "Select member for group 01"

The selected member dialog is available for editing.

### Group address (trigger via bus)

Options: existing group address /  
new group address

An *existing group address* can be assigned in the selection list.

The parameter is divided into **Type**, **Name** and **No**. The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Name

The *name* of the group address is defined when configuring the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

#### No.

The *number* of the group address is the unique identifier of a group address.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

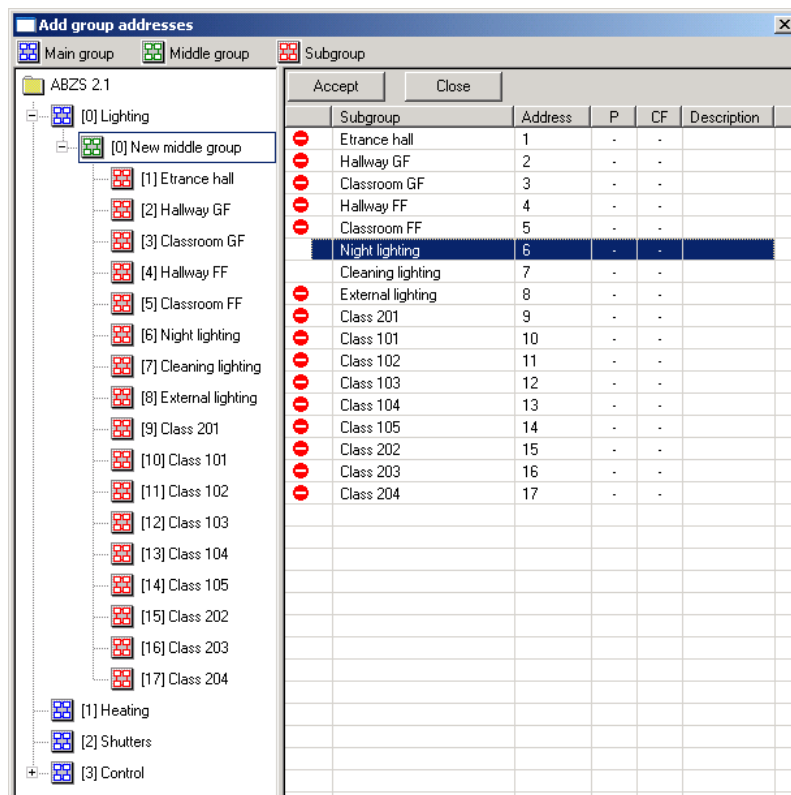


Fig. 194: Dialog window: "Group member, Select group address"

The main group, middle group and the subgroup are created in sequence via drag & drop.

The *Accept* button is activated by clicking on the group address in the right-hand window.

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

After pressing the *Accept* button, a further dialog window *Group address* becomes active. The *data type* for the newly created group address is selected in this window.

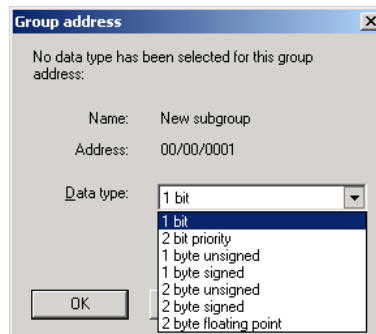


Fig. 195: Parameter window: "Group member, Select data type"

#### **"OK" button**

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

Note: Different options appear in the *Object value* parameter depending on the type which has been selected for the group address.

### Type 1 bit

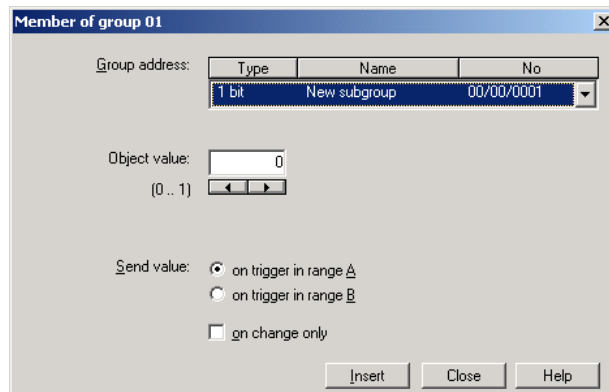


Fig. 196: Parameter window: "Group member, Data type 1 bit"

### Object value (0...1)

Options: 0/1

This parameter is used to select which object value is sent.

**Type 2 bit priority**

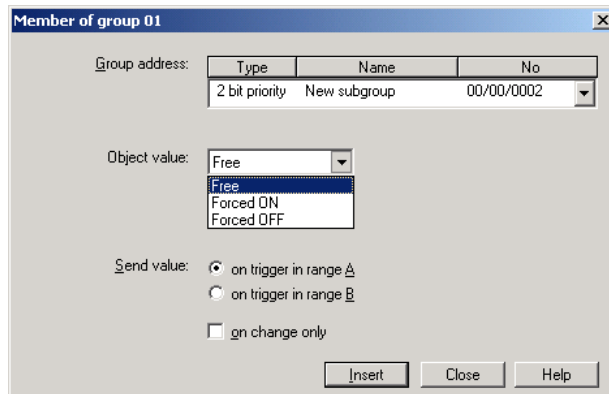


Fig. 197: Parameter window: "Group member, Data type 2 bit priority"

**Object value**

Options: Free/  
 Forced ON/  
 Forced OFF

This parameter is used to select which object value is sent. The priority control function is explained in the following table:

Bit 1	Bit 0	Access	Description
0	0	Free	The priority object has enabled e.g. the switch actuator. The output switches depending on the value of the switch object.
0	1	Free	
1	0	OFF	The priority object has switched e.g. the switch actuator OFF with priority control. The switch object has no function.
1	1	ON	The priority object has switched e.g. the switch actuator ON with priority control. The switch object has no function.

Table 14: Priority object

**Note:** 4 different values can be sent with the telegram. So-called priority objects can thus be addressed in the EIB devices. If a channel e.g. in a switch actuator should switch on or off, the value 1 or 0 is sent to the assigned switch object. If a priority object is also assigned to this channel, the value that was sent to the priority object defines the behaviour of the channel.

### Type 1 byte unsigned (0...255)

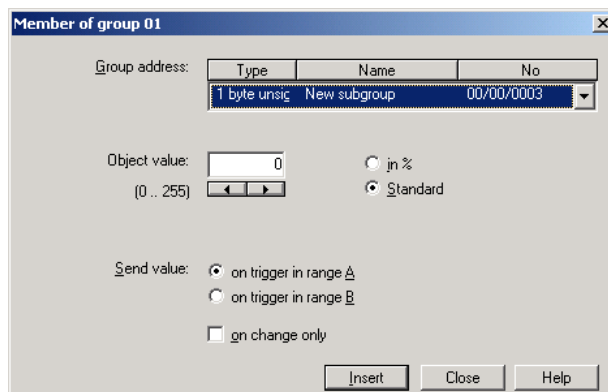


Fig. 198: Parameter window: "Group member, Data type 1 byte unsigned (0...255)"

### Object value (0...255) and Standard

Options: 0...255

This parameter is used to select which object value is sent.

If *Standard* is also selected, the object value is issued without a unit of measurement.

### Type 1 byte unsigned (0...100%)

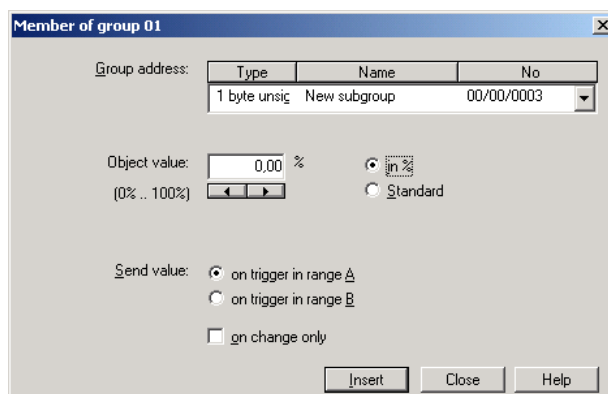


Fig. 199: Parameter window: "Group member, Data type 1 byte unsigned (0...100%)"

### Object value (0...100%) and in %

Options: 0,00...100%

This parameter is used to select which object value is sent.

If the option *in %* is also selected, 0 = 0% and 255 = 100% are assigned to the object values.

**Type 1 byte signed (-128...127)**

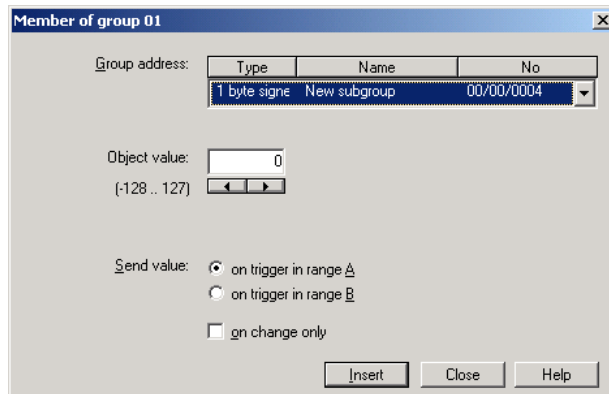


Fig. 200: Parameter window: "Group member, Data type 1 byte signed (-128...127)"

**Object value (-128...127)**

Options: -128...0...127

This parameter is used to select which object value is sent.

**Type 2 byte unsigned (0...65,535)**

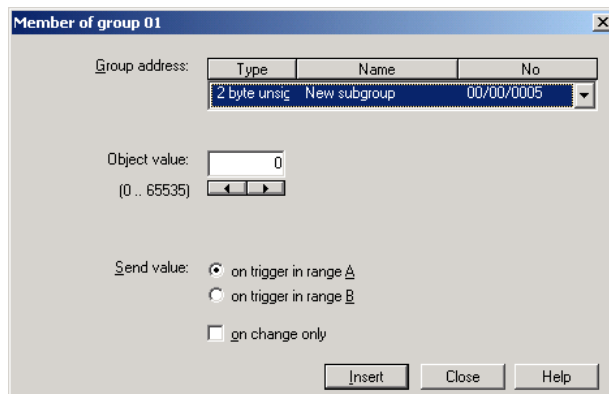


Fig. 201: Parameter window: "Group member, Data type 2 byte unsigned (0...65,535)"

**Object value (0...65,535)**

Options: 0...65,535

This parameter is used to select which object value is sent.



**Type 2 byte signed (-32,768...32,767)**

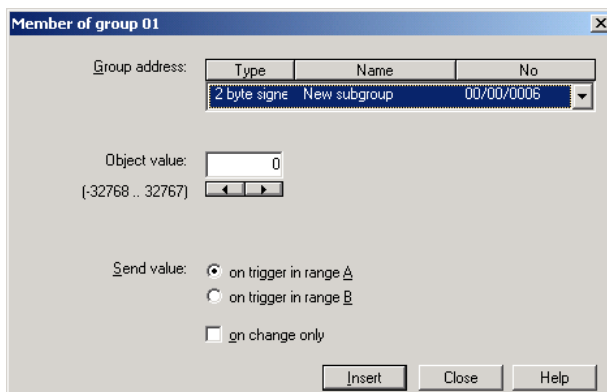


Fig. 202: Parameter window: "Group member, Data type 2 byte signed (-32,768...32,767)"

**Object value (-32,768...32,767)**

Options: -32,768...0...32,767

This parameter is used to select which object value is sent.

**Type 2 byte floating point**

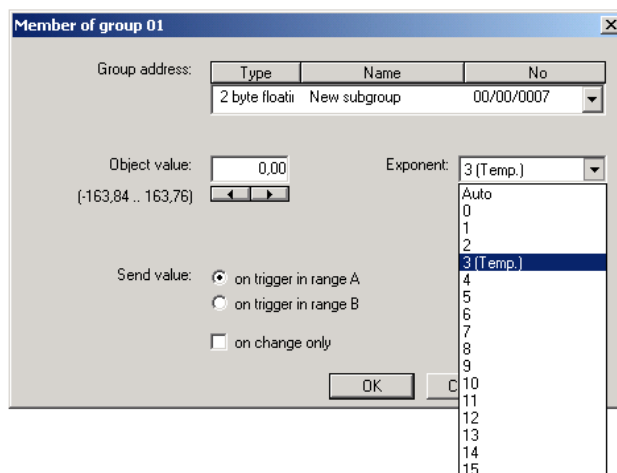


Fig. 203: Parameter window: "Group member, Data type 2 byte floating point"

**Object value (-163.84...163.76) and Exponent 3 (Temp.)**

Options: -163.84...0...163.76

This parameter is used to select which object value is sent.

**Exponent**

Options:           Auto /  
                          0...3 (Temp.)...15

This parameter is used to select which exponent is assigned to the object value.

Note:               Different object values can be set, depending on the exponent which is selected. The table below shows all the options.

Exponent	Object value
Auto	-671,088.64...0.00...670,760.96
0	-20.48...0.00...20.47
1	-40.96...0.00...40.94
2	-81.92...0.00...81.88
3 (Temp.)	-163.84...0.00...163.76
4	-327.68...0.00...327.52
5	-655.36...0.00...655.04
6	-1,310.72...0.00...1,310.08
7	-2,621.44...0.00...2,620.16
8	-5,242.88...0.00...5,240.32
9	-10,485.76...0.00...10,480.64
10	-20,971.52...0.00...20,961.28
11	-41,943.04...0.00...41,922.56
12	-83,886.08...0.00...83,845.12
13	-167,772.16...0.00...167,690.24
14	-335,544.32...0.00...335,380.48
15	-671,088.64...0.00...670,760.96

Table 15:   Exponent

**Send value**

Options:            on trigger in range A /  
                         on trigger in range B

The value which should be sent can be defined for each range via the option *on trigger in range A* or *on trigger in range B*.

**only on change**

A tick in the entry *only on change* means that a telegram is only sent if the value has changed e.g. if the light was already switched on and should still be switched on, this telegram is not sent.

**“OK” button**

When the “OK” button is pressed, the settings are adopted and the parameter window closes.

**“Cancel” button**

When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

## 3.4.11.3 Delete group member

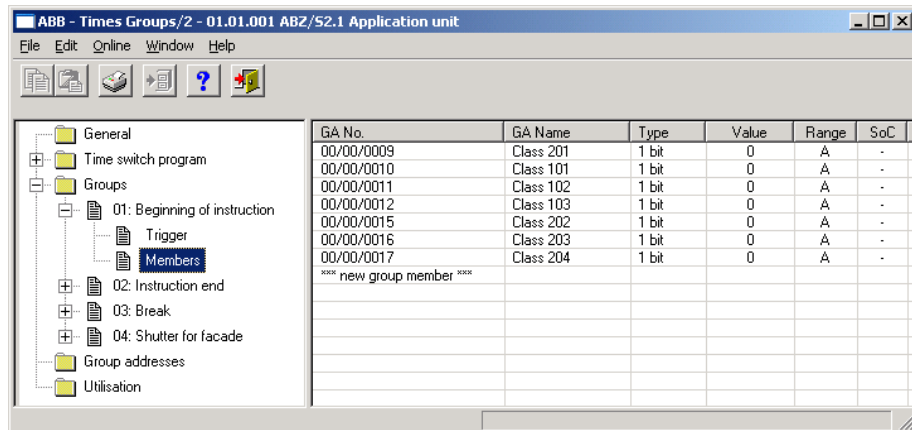


Fig. 204: Dialog window: "Delete group member"

To delete group members, select *Groups*, *01: Beginning of instruction* and *Members* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **Value**, **Range** and **SoC**.

The meaning of the individual columns is as follows:

#### GA No.

The *number* of the group address is the unique identifier of a group address.

#### GA Name

The *name* of the group address is displayed here.

#### Type

The *type* indicates which type of values a telegram with this group address can send.

#### Value

The value which is transmitted when triggering the group with this group address is displayed under *Value*.

**Range**

The entry under *Range* defines whether this value is transmitted when triggering the group in range A or range B.

**SoC (Send on Change)**

A tick in the SoC column indicates that a telegram is only sent if the value differs from the last value that was sent e.g. if the light should be switched on and is already switched on, this telegram is not sent.

Select the group address which should be deleted e.g. GA No. 00/00/009.

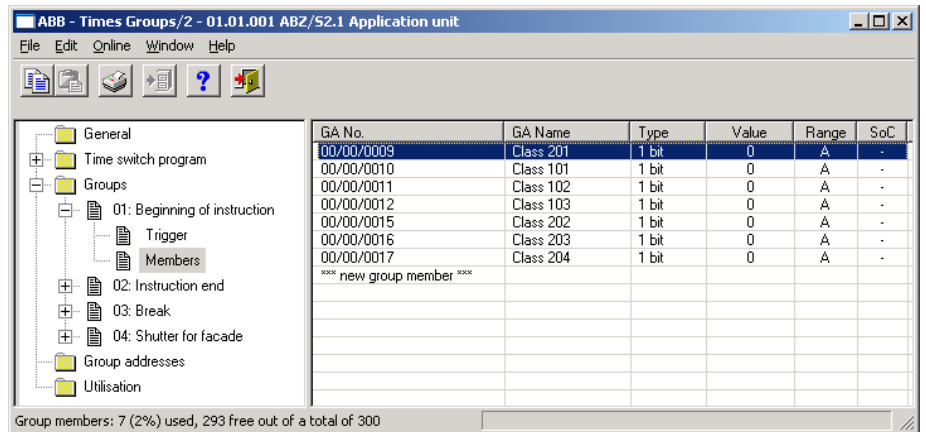


Fig. 205: Dialog window: "Select group member"

The selected group address is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu.
- by selecting *Edit* in the menu bar and then activating *Delete* in the pop-up menu.

**"Yes" button**

Before the group member can be deleted, a prompt must be confirmed with Yes.

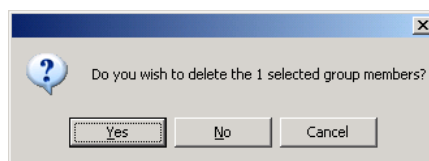


Fig. 206: Parameter window: "Group member, Prompt"

**"No" button**

The group member is not deleted when the *No* button is pressed.

**"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

3.4.12 Group addresses - General

GA No.	GA Name	Type	DR	ST	GT	GM
00/00/0001	Etrance hall	1 bit	-	+	-	-
00/00/0002	Hallway GF	1 bit	-	+	-	-
00/00/0003	Classroom GF	1 bit	-	+	+	-
00/00/0004	Hallway FF	1 bit	-	-	-	-
00/00/0005	Classroom FF	1 bit	-	-	+	-
00/00/0008	External lighting	1 bit	-	+	-	-
00/00/0009	Class 201	1 bit	-	-	-	+
00/00/0010	Class 101	1 bit	-	-	-	+
00/00/0011	Class 102	1 bit	-	-	-	+
00/00/0012	Class 103	1 bit	-	-	-	+
00/00/0013	Class 104	1 bit	-	-	-	-
00/00/0014	Class 105	1 bit	-	-	-	-
00/00/0015	Class 202	1 bit	-	-	-	+
00/00/0016	Class 203	1 bit	-	-	-	+
00/00/0017	Class 204	1 bit	-	-	-	+
03/01/0000	Event in foyer	1 bit	-	-	-	-
03/01/0001	Training evening	1 bit	-	-	-	-
03/01/0002	Sports day	1 bit	-	-	-	-
03/01/0003	Summer school holidays	1 bit	-	-	-	-
03/01/0004	Parents evening	1 bit	-	-	-	-
	**** new group address ****					

Fig. 207: Dialog window: "Group addresses - General"

The table indicates the group addresses which are available for parameterisation and their current usage in the Application Unit Time.

## 3.4.12.1 Insert new group address

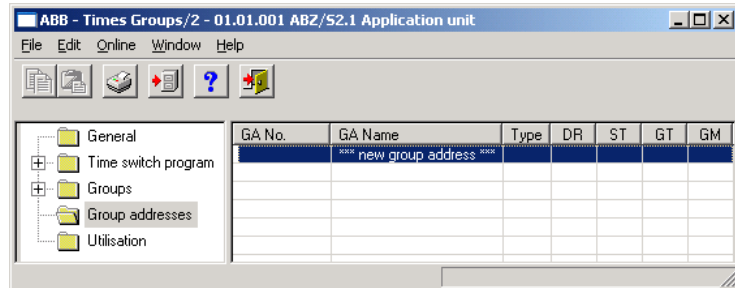


Fig. 208: Dialog window: "Insert new group address"

To insert a group address, select *Group addresses* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **DR**, **ST**, **GT** and **GM**.

The meaning of the individual columns is as follows:

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**DR**

A + in the *Day routine* column (*DR*) indicates whether a telegram with this group address can activate or deactivate a day routine.

**ST**

A + in the *Switching time* column (*ST*) indicates whether a telegram with this group address is assigned to a day routine and is thus sent on the bus at a specific time.



**GT**

A + in the *Group trigger* column (*GT*) indicates whether this group address can trigger a group.

**GM**

A + in the *Group member* column (*GM*) indicates whether this group address belongs to a group.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

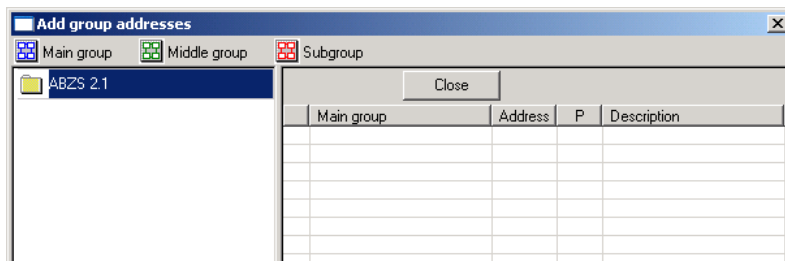


Fig. 209: Dialog window: "Group address, Add group addresses"

The main group, middle group and the subgroup are created in sequence via drag & drop.

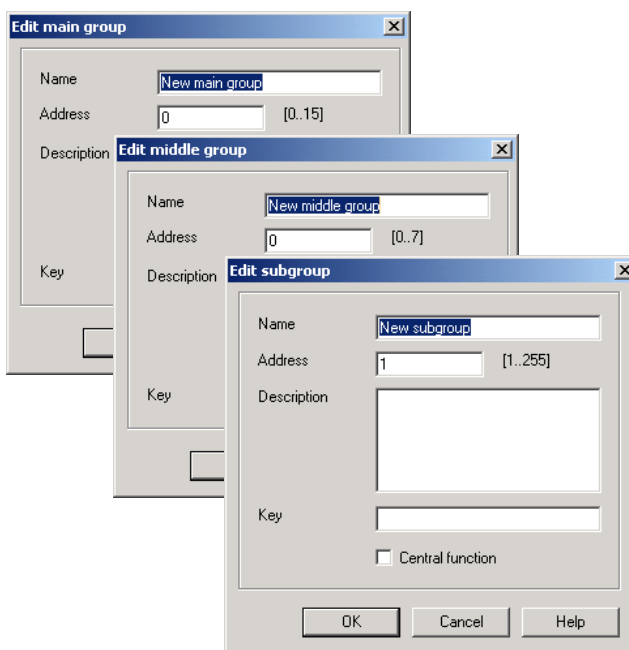


Fig. 210: Parameter window: "Group address, Create new main group, middle group and subgroup"

**Note:** The function descriptions and screenshots of the application program in this product manual all relate to ETS3. The application program for ETS4 has now become available. The only difference between both program versions is the number of possible main groups:  
 ETS3 = up to 15 main groups  
 ETS4 = up to 31 main groups

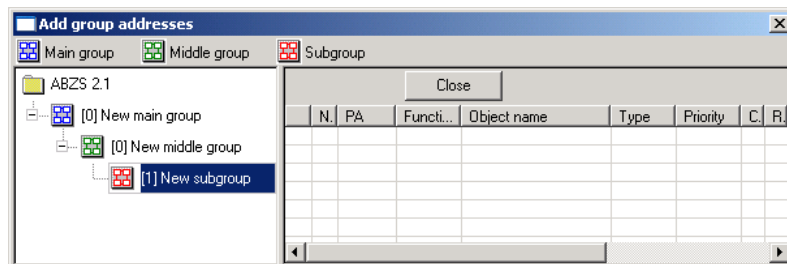


Fig. 211: Dialog window: "Group address, Main group, middle group and subgroup created"

By marking *New middle group* in the left-hand window, the newly created group address is visible in the right-hand window.

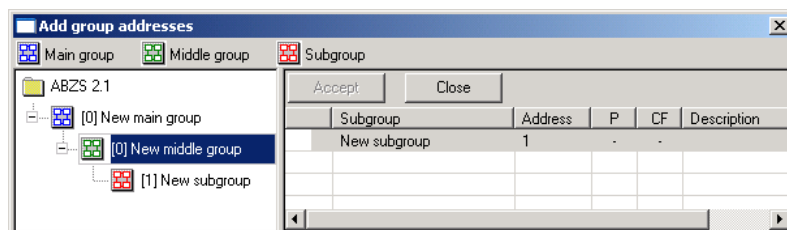


Fig. 212: Dialog window: "Group address, Middle group marked"

The *Accept* button is activated by clicking on the group address in the right-hand window.

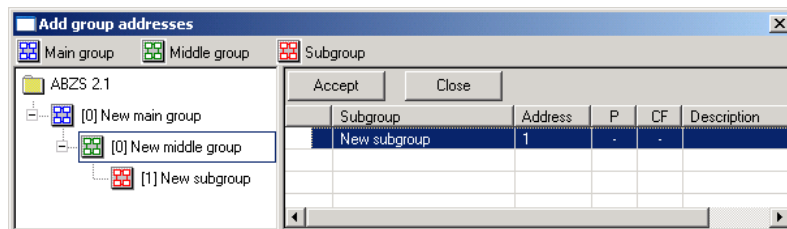


Fig. 213: Dialog window: "Group address, Subgroup marked"

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

After pressing the *Accept* button, a further dialog window *Group address* becomes active. The *data type* for the newly created group address is selected in this window.

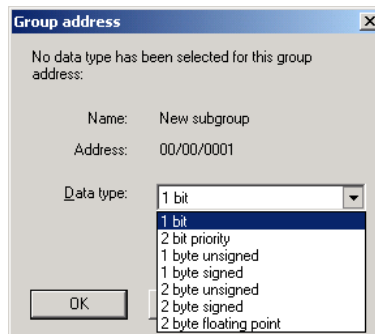


Fig. 214: Parameter window: "Group address, Select data type"

#### **"OK" button**

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

Note: Different data types appear in the table under *Type*, depending on which data type has been selected for a group address.

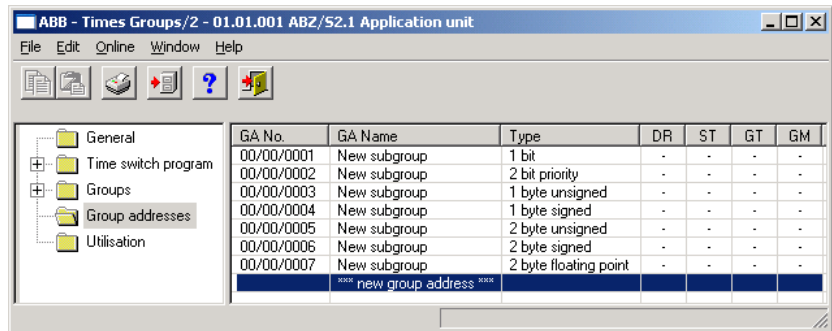


Fig. 215: Dialog window: "Group addresses with different data types"

## 3.4.12.2 Edit group address

GA No.	GA Name	Type	DR	ST	GT	GM
00/00/0001	Etrance hall	1 bit	-	+	-	-
00/00/0002	Hallway GF	1 bit	-	+	-	-
00/00/0003	Classroom GF	1 bit	-	+	+	-
00/00/0004	Hallway FF	1 bit	-	-	-	-
00/00/0005	Classroom FF	1 bit	-	-	+	-
00/00/0008	External lighting	1 bit	-	+	-	-
00/00/0009	Class 201	1 bit	-	-	-	+
00/00/0010	Class 101	1 bit	-	-	-	+
00/00/0011	Class 102	1 bit	-	-	-	+
00/00/0012	Class 103	1 bit	-	-	-	+
00/00/0013	Class 104	1 bit	-	-	-	-
00/00/0014	Class 105	1 bit	-	-	-	-
00/00/0015	Class 202	1 bit	-	-	-	+
00/00/0016	Class 203	1 bit	-	-	-	+
00/00/0017	Class 204	1 bit	-	-	-	+
03/01/0000	Event in foyer	1 bit	-	-	-	-
03/01/0001	Training evening	1 bit	-	-	-	-
03/01/0002	Sports day	1 bit	-	-	-	-
03/01/0003	Summer school holidays	1 bit	-	-	-	-
03/01/0004	Parents evening	1 bit	-	-	-	-
	*** new group address ***					

Fig. 216: Dialog window: "Edit group addresses"

To edit a group address, select *Group addresses* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **DR**, **ST**, **GT** and **GM**.

The meaning of the individual columns is as follows:

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**DR**

A + in the *Day routine* column (*DR*) indicates whether a telegram with this group address can activate or deactivate a day routine.

**ST**

A + in the *Switching time* column (*ST*) indicates whether a telegram with this group address is assigned to a day routine and is thus sent on the bus at a specific time.

**GT**

A + in the *Group trigger* column (*GT*) indicates whether this group address can trigger a group.

**GM**

A + in the *Group member* column (*GM*) indicates whether this group address belongs to a group.

Note: The editing of group addresses is only possible in ETS3.

Select an existing group address e.g. group address 00/00/001. The dialog window *Link group address* is activated in the following way:

- by double-clicking on the selected group address or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

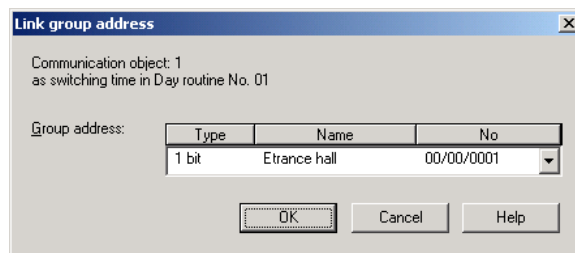


Fig. 217: Parameter window: "Select group address"

**Note:** This dialog window can only be opened if the group address has already been assigned a specific use e.g. activating a day routine. The group address is thus assigned to a communication object via priority control.

### Communication object: X

The communication object number is automatically assigned as a consecutive number by the application program Times Groups/2.

### as switching time in Day routine no. 01

The text displayed here describes the assignment of the selected group address e.g. to the switching time and day routine.

### Group address

Options: existing group address /  
new group address

An *existing group address* can be assigned in the selection list.

The parameter is divided into **Type**, **Name** and **No**. The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:



**Type**

The *type* indicates which type of values a telegram with this group address can send.

**Name**

The *name* of the group address is defined when configuring the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

**No.**

The *number* of the group address is the unique identifier of a group address.

**“OK” button**

When the “OK” button is pressed, the settings are adopted and the parameter window closes.

**“Cancel” button**

When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

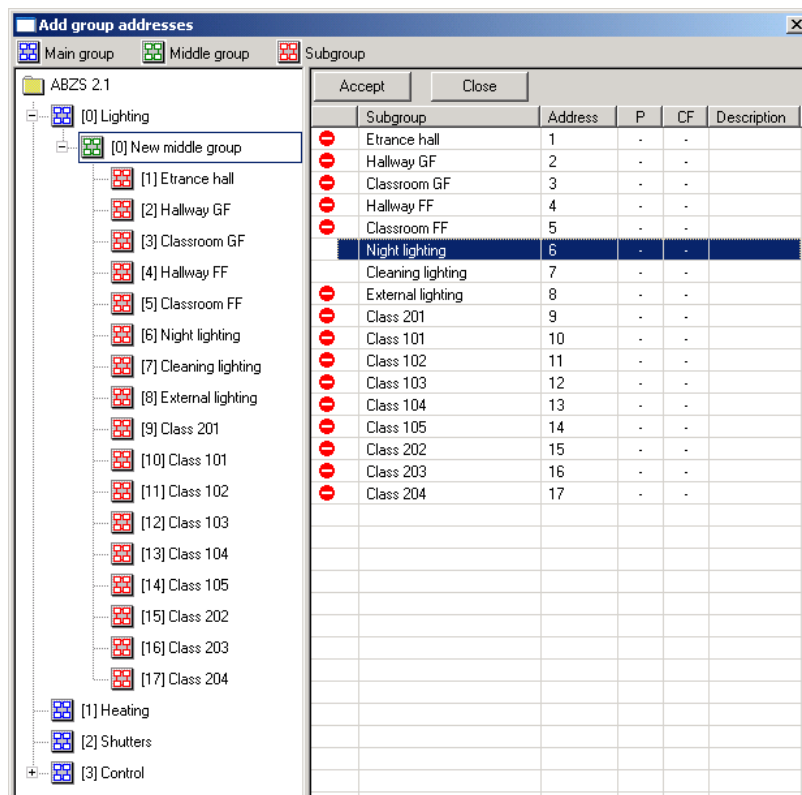


Fig. 218: Dialog window: "Select group address"

The main group, middle group and the subgroup are created in sequence via drag & drop.

The *Accept* button is activated by clicking on the group address in the right-hand window.

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

After pressing the *Accept* button, a further dialog window *Group address* becomes active. The *data type* for the newly created group address is selected in this window.

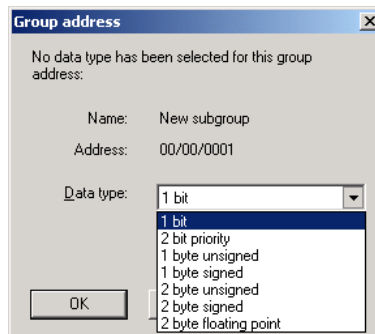


Fig. 219: Parameter window: "Group address, Select data type"

#### **"OK" button**

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.

Note: Different data types appear in the table under *Type*, depending on which data type has been selected for a group address.

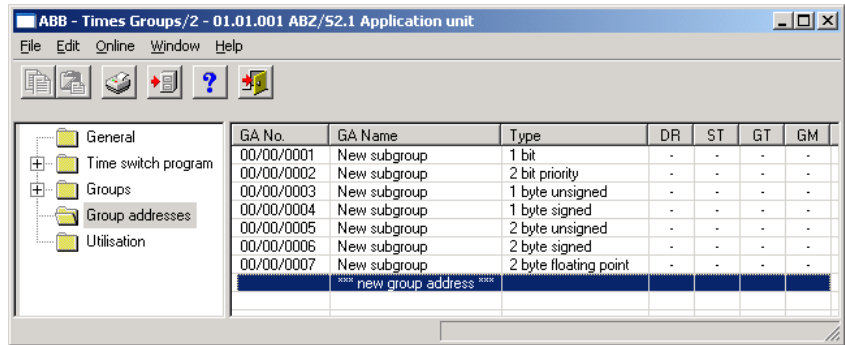


Fig. 220: Dialog window: "Group addresses with different data types"

## 3.4.12.3 Delete group address

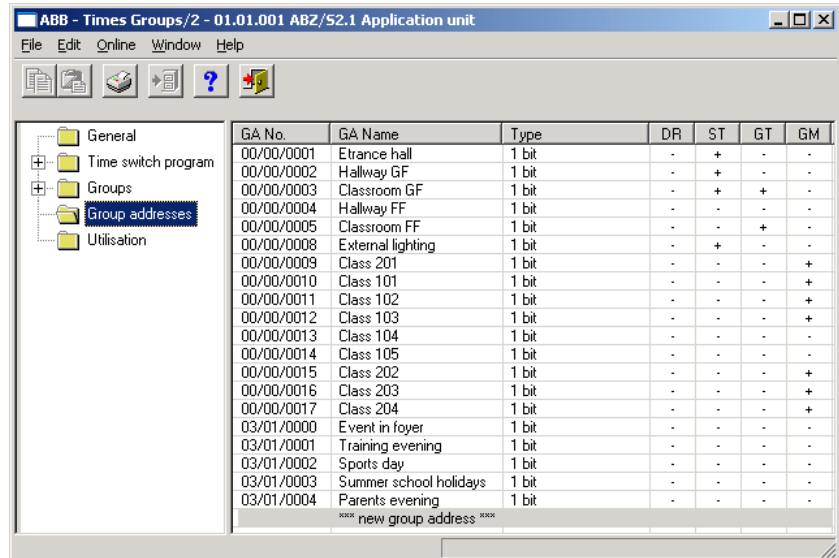


Fig. 221: Dialog window: "Delete group address"

**Note:** The deletion of group addresses is only possible in ETS3. The deletion process described here refers to the used and unused group addresses in the application program. If the group addresses in the dialog are deleted, they remain available.

To delete a group address, select *Group addresses* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **DR**, **ST**, **GT** and **GM**.

The meaning of the individual columns is as follows:

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**DR**

A + in the *Day routine* column (*DR*) indicates whether a telegram with this group address can activate or deactivate a day routine.

**ST**

A + in the *Switching time* column (*ST*) indicates whether a telegram with this group address is assigned to a day routine and is thus sent on the bus at a specific time.

**GT**

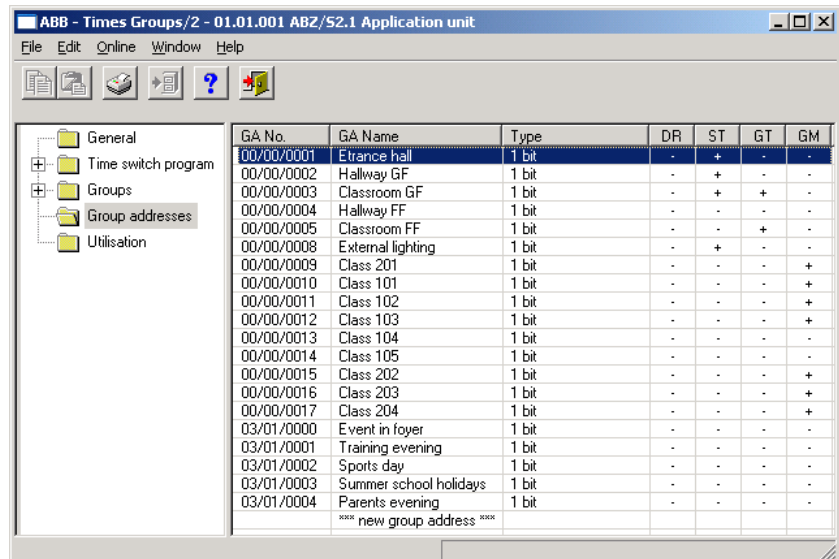
A + in the *Group trigger* column (*GT*) indicates whether this group address can trigger a group.

**GM**

A + in the *Group member* column (*GM*) indicates whether this group address belongs to a group.

Note: The deletion of group addresses is only possible in ETS3.

Select the group address which should be deleted e.g. GA No. 00/00/001.



The screenshot shows a software window titled "ABB - Times Groups/2 - 01.01.001 ABZ/S2.1 Application unit". The window contains a tree view on the left with folders for "General", "Time switch program", "Groups", "Group addresses", and "Utilisation". The "Group addresses" folder is expanded, and a table of group addresses is displayed. The first row, GA No. 00/00/0001, is selected. The table has columns for GA No., GA Name, Type, DR, ST, GT, and GM.

GA No.	GA Name	Type	DR	ST	GT	GM
00/00/0001	Etrance hall	1 bit	-	+	-	-
00/00/0002	Hallway GF	1 bit	-	+	-	-
00/00/0003	Classroom GF	1 bit	-	+	+	-
00/00/0004	Hallway FF	1 bit	-	-	-	-
00/00/0005	Classroom FF	1 bit	-	+	+	-
00/00/0008	External lighting	1 bit	-	+	-	-
00/00/0009	Class 201	1 bit	-	-	-	+
00/00/0010	Class 101	1 bit	-	-	-	+
00/00/0011	Class 102	1 bit	-	-	-	+
00/00/0012	Class 103	1 bit	-	-	-	+
00/00/0013	Class 104	1 bit	-	-	-	-
00/00/0014	Class 105	1 bit	-	-	-	-
00/00/0015	Class 202	1 bit	-	-	-	+
00/00/0016	Class 203	1 bit	-	-	-	+
00/00/0017	Class 204	1 bit	-	-	-	+
03/01/0000	Event in foyer	1 bit	-	-	-	-
03/01/0001	Training evening	1 bit	-	-	-	-
03/01/0002	Sports day	1 bit	-	-	-	-
03/01/0003	Summer school holidays	1 bit	-	-	-	-
03/01/0004	Parents evening	1 bit	-	-	-	-
*** new group address ***						

Fig. 222: Dialog window: "Select group address"

The selected group address is deleted in the following way:

- by pressing the Del button or
- by pressing the right mouse button and selecting *Delete* in the pop-up menu or
- by selecting *Edit* in the menu bar and then activating *Delete* in the pop-up menu.

Before the group address can be deleted, a further dialog window *Usage* is opened. This window displays the use of the selected group address.

#### “Delete” button

The group address is deleted via this button and the parameter window closes.

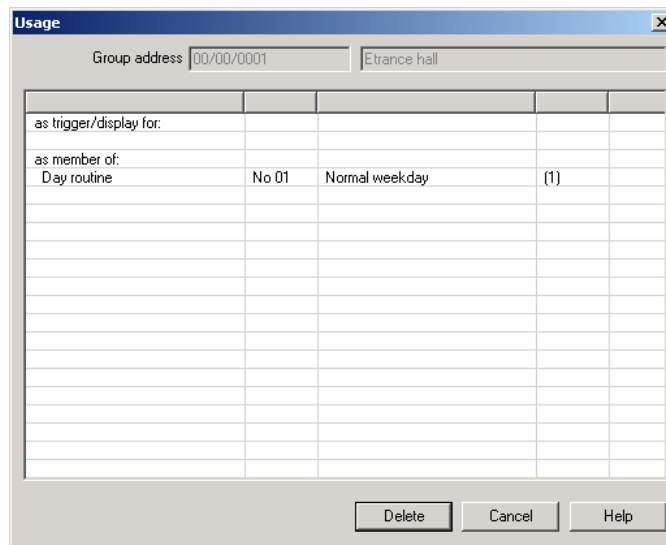


Fig. 223: Dialog window “Usage”

#### “Cancel” button

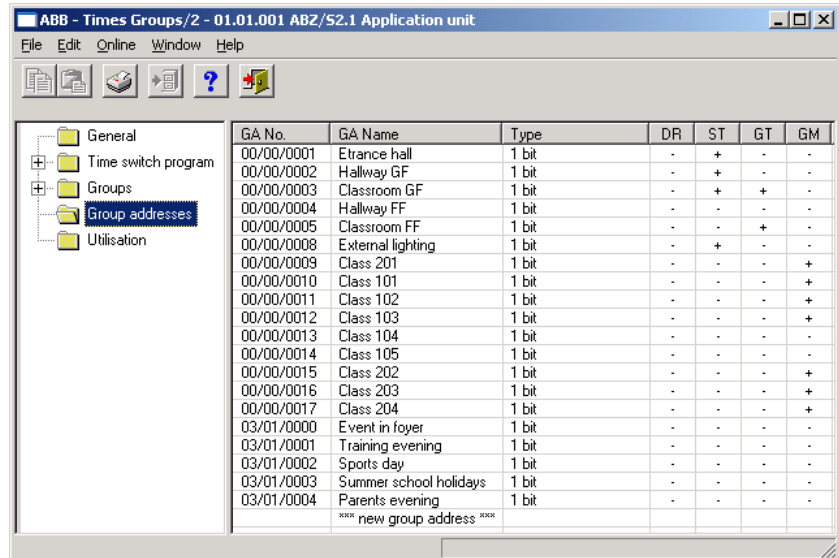
When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

#### “Help” button

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.



## 3.4.12.4 Rename group address



GA No.	GA Name	Type	DR	ST	GT	GM
00/00/0001	Etrance hall	1 bit	-	+	-	-
00/00/0002	Hallway GF	1 bit	-	+	-	-
00/00/0003	Classroom GF	1 bit	-	+	+	-
00/00/0004	Hallway FF	1 bit	-	-	-	-
00/00/0005	Classroom FF	1 bit	-	-	+	-
00/00/0008	External lighting	1 bit	-	+	-	-
00/00/0009	Class 201	1 bit	-	-	-	+
00/00/0010	Class 101	1 bit	-	-	-	+
00/00/0011	Class 102	1 bit	-	-	-	+
00/00/0012	Class 103	1 bit	-	-	-	+
00/00/0013	Class 104	1 bit	-	-	-	-
00/00/0014	Class 105	1 bit	-	-	-	-
00/00/0015	Class 202	1 bit	-	-	-	+
00/00/0016	Class 203	1 bit	-	-	-	+
00/00/0017	Class 204	1 bit	-	-	-	+
03/01/0000	Event in foyer	1 bit	-	-	-	-
03/01/0001	Training evening	1 bit	-	-	-	-
03/01/0002	Sports day	1 bit	-	-	-	-
03/01/0003	Summer school holidays	1 bit	-	-	-	-
03/01/0004	Parents evening	1 bit	-	-	-	-
	**** new group address ****					

Fig. 224: Dialog window: "Rename group address"

To rename a group address, select *Group addresses* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **DR**, **ST**, **GT** and **GM**.

The meaning of the individual columns is as follows:

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**DR**

A + in the *Day routine* column (*DR*) indicates whether a telegram with this group address can activate or deactivate a day routine.

**ST**

A + in the *Switching time* column (*ST*) indicates whether a telegram with this group address is assigned to a day routine and is thus sent on the bus at a specific time.

**GT**

A + in the *Group trigger* column (*GT*) indicates whether this group address can trigger a group.

**GM**

A + in the *Group member* column (*GM*) indicates whether this group address belongs to a group.

Note: The renaming of group addresses is only possible in ETS3.

## 3.4.12.5 Assign group address

GA No.	GA Name	Type	DR	ST	GT	GM
00/00/0001	Entrance hall	1 bit	-	+	-	-
00/00/0002	Hallway GF	1 bit	-	+	-	-
00/00/0003	Classroom GF	1 bit	-	+	+	-
00/00/0004	Hallway FF	1 bit	-	-	-	-
00/00/0005	Classroom FF	1 bit	-	-	+	-
00/00/0008	External lighting	1 bit	-	+	-	-
00/00/0009	Class 201	1 bit	-	-	-	+
00/00/0010	Class 101	1 bit	-	-	-	+
00/00/0011	Class 102	1 bit	-	-	-	+
00/00/0012	Class 103	1 bit	-	-	-	+
00/00/0013	Class 104	1 bit	-	-	-	-
00/00/0014	Class 105	1 bit	-	-	-	-
00/00/0015	Class 202	1 bit	-	-	-	+
00/00/0016	Class 203	1 bit	-	-	-	+
00/00/0017	Class 204	1 bit	-	-	-	+
03/01/0000	Event in foyer	1 bit	-	-	-	-
03/01/0001	Training evening	1 bit	-	-	-	-
03/01/0002	Sports day	1 bit	-	-	-	-
03/01/0003	Summer school holidays	1 bit	-	-	-	-
03/01/0004	Parents evening	1 bit	-	-	-	-
**** new group address ****						

Fig. 225: Dialog window: "Assign group address"

To assign a group address, select *Group addresses* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **GA No.**, **GA Name**, **Type**, **DR**, **ST**, **GT** and **GM**.

The meaning of the individual columns is as follows:

**GA No.**

The *number* of the group address is the unique identifier of a group address.

**GA Name**

The *name* of the group address is displayed here.

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**DR**

A + in the *Day routine* column (*DR*) indicates whether a telegram with this group address can activate or deactivate a day routine.

**ST**

A + in the *Switching time* column (*ST*) indicates whether a telegram with this group address is assigned to a day routine and is thus sent on the bus at a specific time.

**GT**

A + in the *Group trigger* column (*GT*) indicates whether this group address can trigger a group.

**GM**

A + in the *Group member* column (*GM*) indicates whether this group address belongs to a group.

Note: The assignment of group addresses is only possible in ETS3.

Select an existing group address e.g. the group address 00/00/001. The dialog window *Link group address* is activated in the following way:

- by double-clicking on the selected group address or
- by pressing the right mouse button and selecting *Edit* in the pop-up menu.

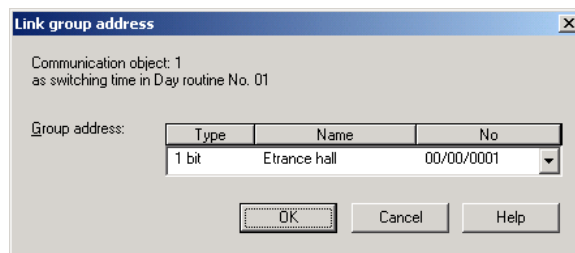


Fig. 226: Parameter window: "Assign group address"

**Note:** This dialog window can only be opened if the group address has already been assigned a specific use e.g. activating a day routine. The group address is thus assigned to a communication object via priority control.

### Communication object: X

The communication object number is automatically assigned as a consecutive number by the application program Times Groups/2.

### as switching time in Day routine no. 01

The text displayed here describes the assignment of the selected group address e.g. to the switching time and day routine.

**Note:** A group address can be reassigned for the communication object number and the description. If a new assignment is selected, this is represented in the table in the column DR, ST, GT or GM with a +.

**Group address**

Options:                   existing group address /  
                                  new group address

An *existing group address* can be assigned in the selection list.

The parameter is divided into **Type**, **Name** and **No.** The table can be arranged and sorted as required.

The meaning of the individual columns is as follows:

**Type**

The *type* indicates which type of values a telegram with this group address can send.

**Name**

The *name* of the group address is defined when configuring the ABB i-bus<sup>®</sup> installation and cannot be modified with the parameterisation software PZM2.

**No.**

The *number* of the group address is the unique identifier of a group address.

**“OK” button**

When the “OK” button is pressed, the settings are adopted and the parameter window closes.

**“Cancel” button**

When the “Cancel” button is pressed, the function is aborted and the parameter window closes.

**“Help” button**

The “Help” file can be opened directly via the “Help” button and a further parameter window *Help for application program...* is opened.

After selecting the option *new group address*, the associated dialog window *Add group addresses* is activated.

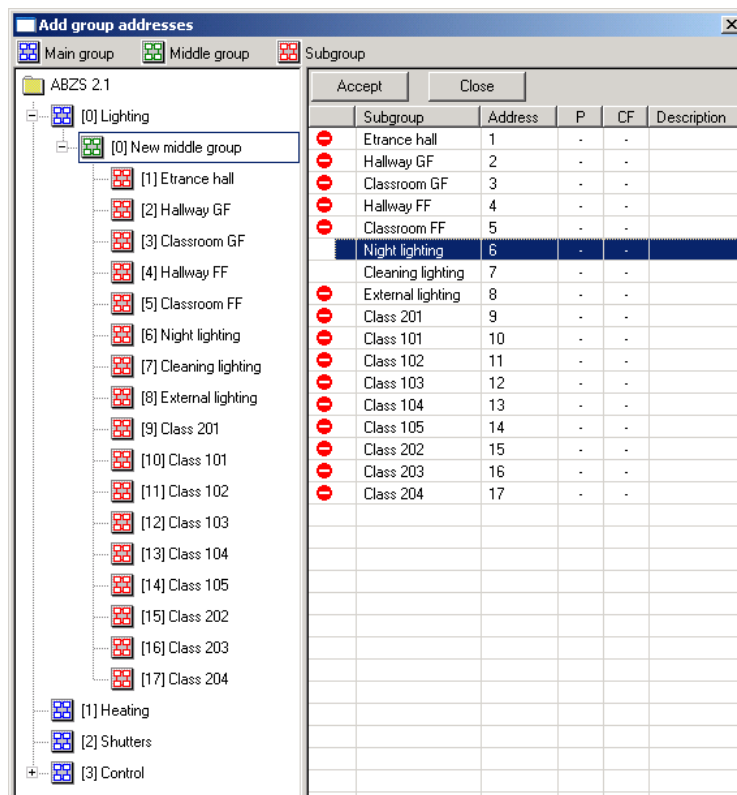


Fig. 227: Dialog window: "Select group address"

The main group, middle group and the subgroup are created in sequence via drag & drop.

The *Accept* button is activated by clicking on the group address in the right-hand window.

The *new group address* is adopted in the following way:

- by double-clicking on the active group address or
- by pressing the right mouse button and selecting *Accept* in the pop-up menu or
- by pressing the *Accept* button.

After pressing the *Accept* button, a further dialog window *Group address* becomes active. The *data type* for the newly created group address is selected in this window.

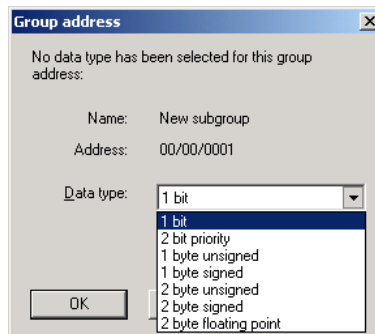


Fig. 228: Parameter window: "Group address, Select data type"

#### **"OK" button**

When the "OK" button is pressed, the settings are adopted and the parameter window closes.

#### **"Cancel" button**

When the "Cancel" button is pressed, the function is aborted and the parameter window closes.

#### **"Help" button**

The "Help" file can be opened directly via the "Help" button and a further parameter window *Help for application program...* is opened.

**Note:** The transfer of the newly created group address to ETS3 is only carried out after exiting the ABZ/S parameterisation and after confirming the prompt that the modified data should be saved. The editing of the group addresses such as modification of the description or deletion can only be carried out in ETS3.



Note: Different data types appear in the table under *Type*, depending on which data type has been selected for a group address.

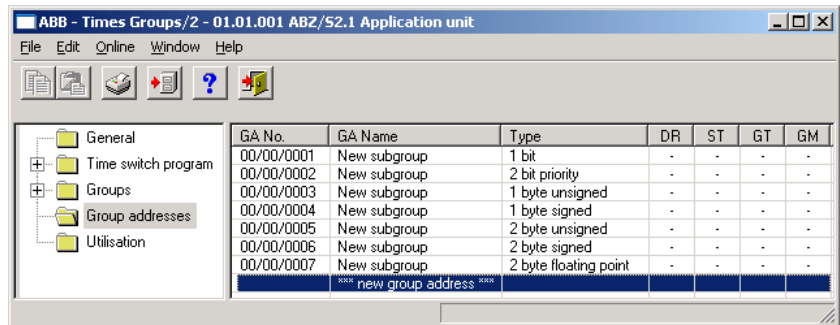


Fig. 229: Dialog window: "Group addresses with different data types"

3.4.13 Utilisation

Field name	Size	used	(%)	free
<b>Addresses and objects</b>				
Group addresses	250	20	(8%)	230
Objects	250	12	(4%)	238
Associations	250	13	(5%)	237
<b>Time switch program</b>				
Day routines	15	8	(53%)	7
Switching times	800	4	(0%)	796
Special days	100	3	(3%)	97
Daylight saving times	10	10	(100%)	0
<b>Groups</b>				
Groups	30	4	(13%)	26
Group members	300	7	(2%)	293

Fig. 230: Dialog window: "Utilisation"

Select *Utilisation* in the selection area.

The associated table is activated in the right-hand window.

The table is divided into **Field name**, **Size**, **used**, **(%)** and **free**.

The meaning of the individual columns is as follows:

**Field name**

Under *Field name*, you find a selection of addresses and objects with subdivision into group addresses, objects and associations. Under time switch program, there is a further division into day routines, switching times, special days and daylight saving times. The groups are subdivided into groups and group members.

**Size**

The maximum possible number is displayed here.

**used**

The current number is displayed here.

**(%)**

The number used is shown here as a percentage.

**free**

The number still available is shown here.

3.5 Communication objects  
250 to 253

Number	Object Function	Name	Length	C	R	W	T	U	Data Type
250	Request object	Request object	1 bit	C	R	W	T	-	1 bit DPT_Switch
251	Date	Date	3 Byte	C	R	W	T	-	Time DPT_TimeOfDay
252	Time	Time	3 Byte	C	R	W	T	-	Date DPT_Date
253	Timeprogram lock	Timeprogram lock	1 bit	C	R	W	T	-	1 bit DPT_Switch

Fig. 231: Communication objects 250 to 253

No.	Function	Object name	Data type	Flags
250		<b>Request object</b>	<b>EIS 1, 1 bit DTP 1.001</b>	<b>C, R, W, T</b>
<p>The date and time can be queried via this communication object.</p> <p>Telegram value            "0"                   do not start a query                                   "1"                   start query</p> <p>This communication object is only visible if the options <b>Slave</b> or <b>Master</b> have been selected in the parameter <b>Operating mode of clock</b>.</p>				
251		<b>Date</b>	<b>EIS4, 3 byte DTP 10.001</b>	<b>C, R, W, T</b>
<p>This communication object is used to send or receive the date.</p>				
252		<b>Time</b>	<b>EIS3, 3 byte DTP 11.001</b>	<b>C, R, W, T</b>
<p>This communication object is used to send or receive the time.</p>				
253		<b>Time program lock / unlock</b>	<b>EIS1, 1 bit DTP 1.001</b>	<b>C, R, W, T</b>
<p>The communication object has the following meaning depending on the options in the <i>Time switch program</i> parameter – <i>unlock with 1</i> or <i>lock with 1</i>:</p> <p><i>lock with 1</i>, telegram value                    "0"   unlock   "1"   lock</p> <p><i>unlock with 1</i>, telegram value                "0"   lock   "1"   unlock</p> <p>This communication object is always active as it can also be assigned a group address directly by ETS3.</p>				

Table 16: Communication objects 250 to 253 "General"

## 4 Planning and application

This section contains some practical tips for using the Application Unit Time.

### 4.1 Context-sensitive “Help” file

The context-sensitive “Help” file gives you the necessary information for each step when parameterising the application program Times Groups/2.

The context-sensitive “Help” file is retrieved in the following way:

- press the **Help** button in the dialog window,
- press the right mouse button in the table area to select **Help**,
- press **F1** on the keyboard or
- press the **Help** button on the toolbar.

The best way of working with the application program and the “Help” file is to proceed as follows:

First start ETS3 and open the project which you wish to edit. Minimise the main ETS3 window and move it to the top right-hand corner.

After starting the application program, minimise the window and move it to the right edge of the screen so that about a third of the screen width remains free. Now retrieve the “Help” file and minimise and position the window in the free area on the left-hand edge of the screen.

You can now see the relevant “Help” page for each step on the left-hand side if you retrieve the context-sensitive “Help” file to obtain information. You can receive further explanations about the green, underlined terms by clicking on them. You return to the previous “Help” page via the “Back” button.

#### 4.2 Behaviour on bus voltage failure

In the event of a bus voltage failure, the Application Unit Time stores the communication object values of the inputs and outputs for at least 1 h. If the bus voltage failure lasts considerably longer, the stored communication object values are lost.

Secure states after a bus voltage failure can be achieved by selecting the parameter setting "Behaviour after bus voltage recovery".

#### 4.3 Behaviour after bus voltage recovery

To prevent an unwanted operational response after a bus voltage failure, particular in larger installations, the installation of an uninterruptible power supply is provided for the bus voltage and the scanning voltage of the contacts.

## **Appendix**

### **A.1 Scope of supply**

The Application Unit Time is supplied with the following parts. Please check the scope of supply according to the following list.

- 1 x ABZ/S 2.1, Application Unit Time, MDRC
- 1 x installation and operating instructions
- 1 x bus connecting terminal (red/black)

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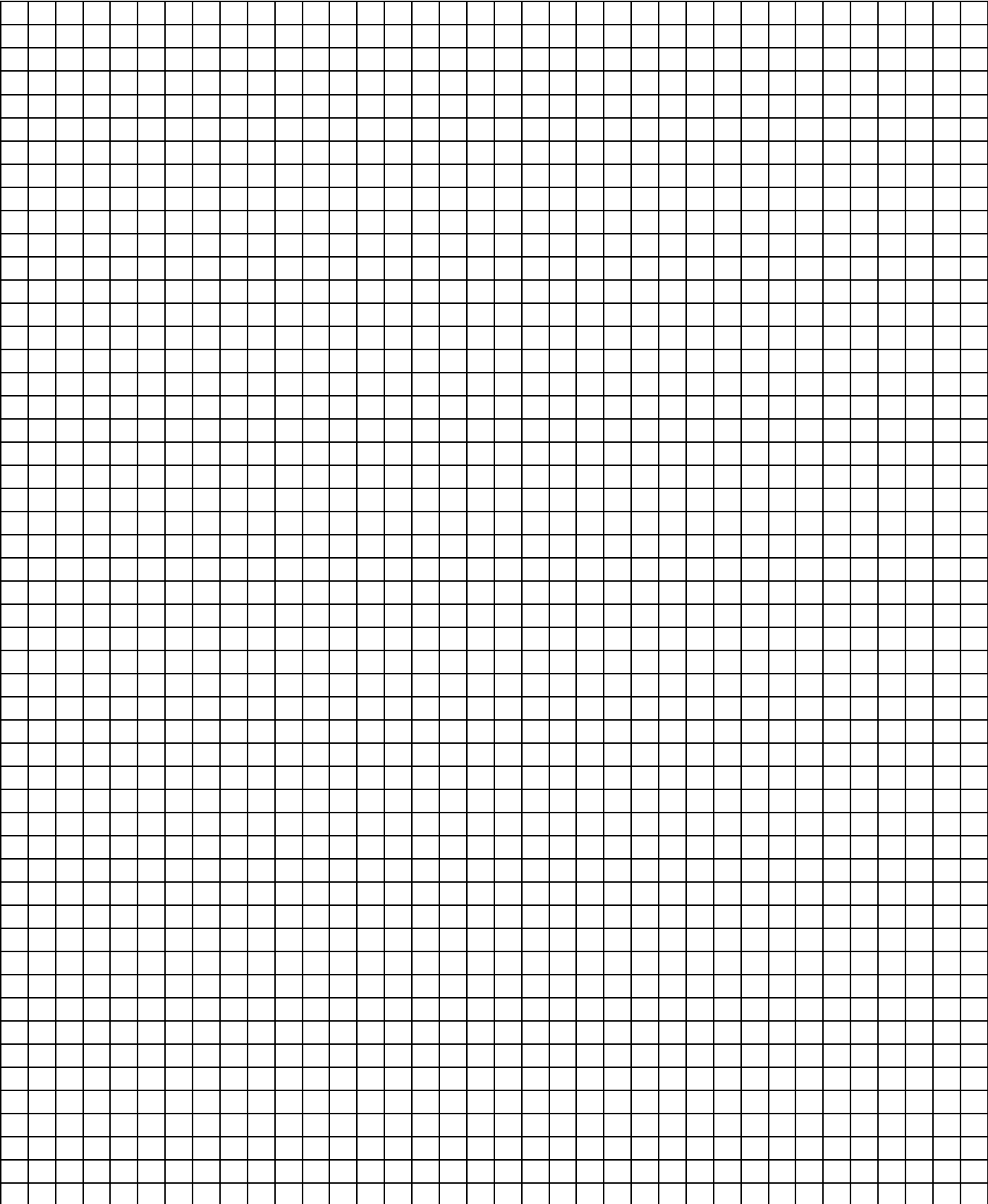
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**A.5 Ordering information**

Short code	Description	Order no.	bbn 40 16779 EAN	Price group	Unit weight [kg]	Pack unit [pce.]
ABZ/S 2.1	Application Unit Time, MDRC	2CDG 110 072 R0011	652 36 0	26	0.1	1

Table 17: Ordering information for Application Unit Time, MDRC









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