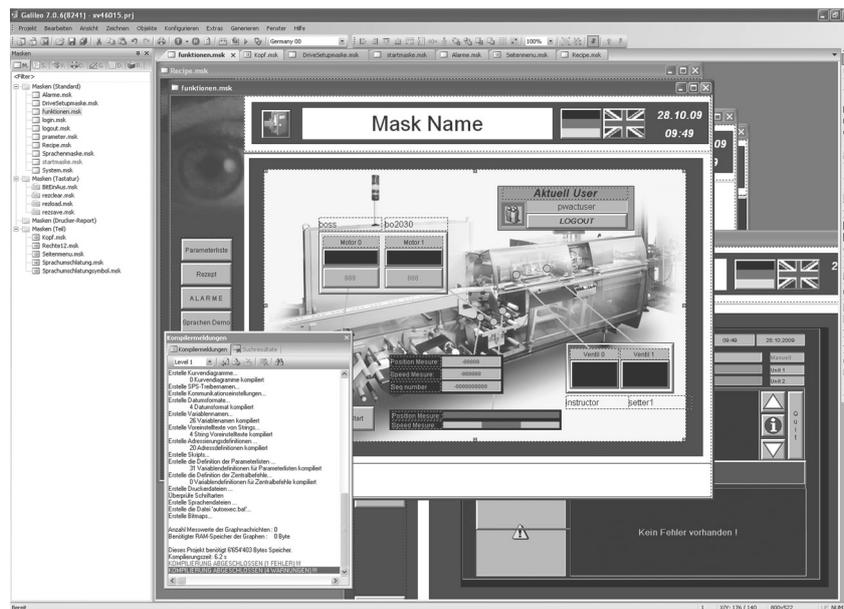


# Communication EIB2-TP



# Imprint

## **Manufacturer**

Eaton Automation AG  
Spinnereistrasse 8-14  
CH-9008 St. Gallen  
Schweiz

[www.eaton-automation.com](http://www.eaton-automation.com)  
[www.eaton.com](http://www.eaton.com)

## **Support**

### **Region North America**

Eaton Corporation  
Electrical Sector  
1111 Superior Ave.  
Cleveland, OH 44114  
United States  
877-ETN-CARE (877-386-2273)

[www.eaton.com](http://www.eaton.com)

### **Other regions**

Please contact your supplier or send an E-Mail to:

[automation@eaton.com](mailto:automation@eaton.com)

## **Original instructions**

The German version of this document is the original instructions.

## **Editor**

Manfred Hüppi

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## Proper use

**Hardware, software, operating systems and drivers must only be used for the applications specified and only in conjunction with the components recommended by Eaton Automation AG.**

## Warning !

**No warranty claims will be recognized for faults arising from the improper handling of devices and modules.**

**The devices, even by means of communication, should not be used for the implementation of any safety functions relating to the protection of personnel and machinery.**

**No liability is accepted for claims for damages arising from a failure or functional defect in the device.**

**All data specified in this document does not represent warranted properties in the legal sense.**

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## 1 GENERAL

This documentation is designed as a reference for connecting, commissioning and operating the EIB2-TP communication card.

The card can only be operated in the appropriate slot on the MICRO PANEL. The full range of card functions, including EIB script, is only available on the MICRO PANELs which are configured in GALILEO (design software).

All software configurations of the card are implemented directly via the design software of the basic device.

**Note:**

**The EIB protocol in the form described is only supported from GALILEO V 5.3.x.**

For connecting, commissioning and operating the EIB2-TP communication card, see the EIB2-TP user manual.

### 2 FUNCTION OF THE EIB2-TP

The EIB2-TP card can receive all frames visible on the EIB bus and forward them to an MI touch panel.

All objects (group addresses) defined in the GALILEO project can be written and received or explicitly scanned by this card.

This card has no entry in the EIB database. Group addresses are also therefore not confirmed by the card. It is therefore also not possible to scan objects of the EIB2-TP.

Apart from the physical address, the ETS cannot configure this card. However, entering the physical address using the GALILEO project is recommended.

The card is designed so that it does not generate more than a 50% bus load.

### 3 DRIVER SELECTION

#### Notes on driver versions:

The dialogs shown from GALILEO can alter slightly depending on the version.

The appropriate driver is selected in GALILEO via Select PLC. The EIB (3rd release) should be selected for the EIB2-TP' communication card.

The driver for the 2nd release is only designed for projects that were created with the old EIB-TP card and which now have to be run on the EIB2-TP. Using this driver enables an 'identical behavior' to be emulated. An update to the '3rd release', however, is always highly recommended.

#### Note:

The driver for the '1st release' must be selected for the old 'EIB-TP' communication card. This driver has a restricted range of functions.

#### Selecting the driver

No.	Port	Board Type	Communication	Model	Description
0	Slot 0	EIB2-TP	BC 3	EIB (3rd release)	

Add    Remove    Modify    Meta Data

Baud rate: 9600  
 Status Refresh [s]: 60  
 WRITE break[ms]: 0  
 FRAME break[ms]: 500  
 Address: 0  
 Line: 0  
 Area: 0

OK    Cancel    Help

#### Baud rate

9600 baud is permissible. The default setting is 9600 baud.

#### Status Refresh

Time in seconds, after which GALILEO (system messages) refreshes its status information. This is not used in most EIB projects without intelligent actuators.

## 3 Driver selection

### **WRITE break FRAME break**

This allows the entry of a break value (in 10ms increments) between write and frame telegrams. This ensures that the bus is not 'jammed up' with large telegram sequences. This is particularly important when using recipes (Write) and when starting the panel (Frame).

### **Address / Area / Line**

A physical address can be set here for the MMI. This can for example be useful when troubleshooting in the EIB network, as this address can be used to find the sender of an EIB command.

The entry is in decimal format and is specified according to EIB requirements as follows:

Address	ccccccc	8-bit address:	0 - 255
Area	aaaa	4-bit area:	0 - 15
Line	bbbb	4-bit line:	0 - 15

Further information is provided in the GALILEO documentation.

### **3.1 RANGE OF FUNCTIONS**

All EIS data types are supported. If the appropriate data type is not directly available, it can be created with structures.

Notes on the supported data types are provided in the GALILEO Help:

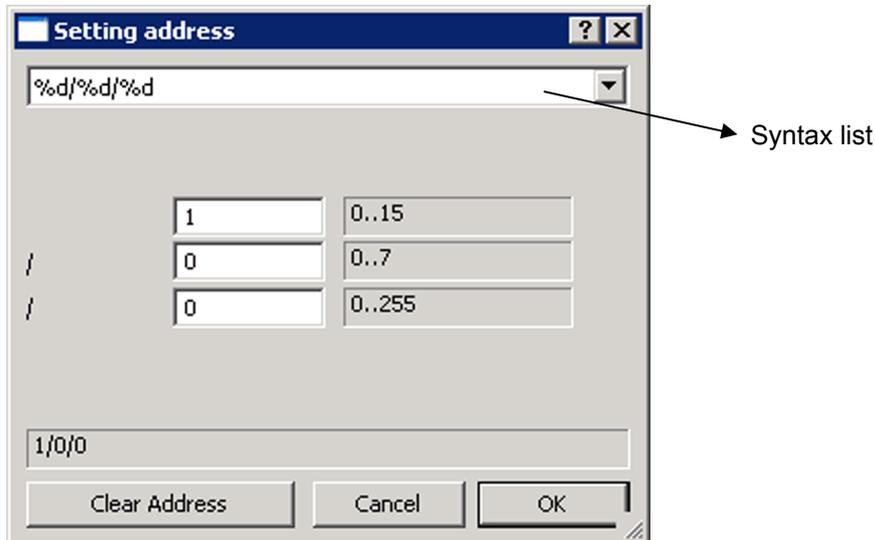
Chapter: EIB 3rd Release  
Subchapter: EIS formats

## 4 ENTERING A GROUP ADDRESS

A group address can only be entered in 3-point notation.

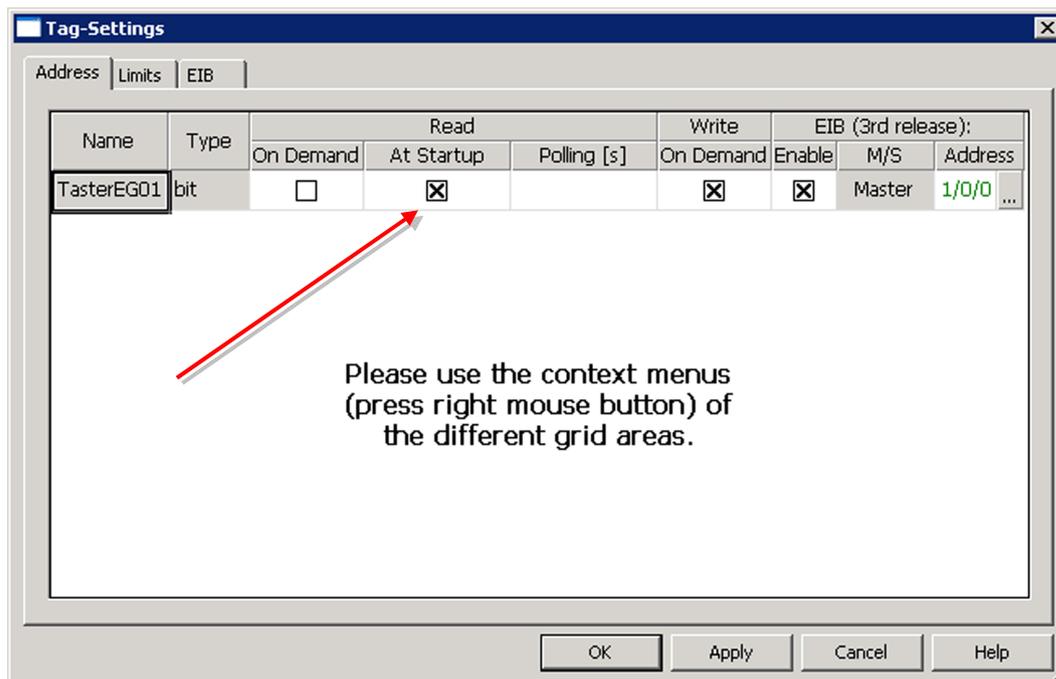
Example: Entry of address 1/1/1

With special EIS types, this must also be selected in the syntax list before the address is stated!



### 4.1 INITIALIZATION ON STARTUP

As the EIB does not implement polling communication but is event-oriented, states are not automatically read when the touch panel is started up. The panel does not therefore know the current status of the actuators and sensors in the network. These can therefore be selected specifically in GALILEO. Activating the **At Startup** checkbox causes the panel to send a status request to the appropriate address.



## 4 Entering a group address

In order to utilize this option, the EIB components used must also support this function.

### Note:

**The number of these elements should be taken into account as the EIB bus system is slow.**

The following rule should always be observed: Each address requires 0.5 seconds.

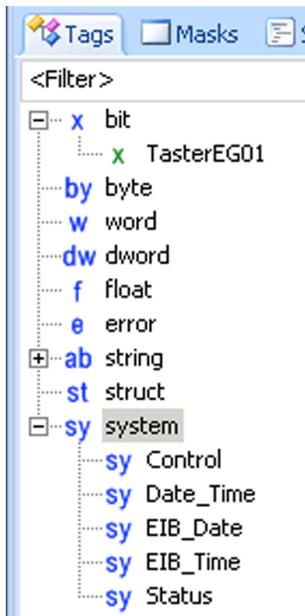
If approx. 1000 addresses are scanned, the system therefore requires  $0.5 * 1000 = 500$  seconds. This is an initialization time of approx. 9 minutes!

The initialization is run interactively. In other words, the panel can be operated during the initialization phase. It is therefore entirely possible that the indication elements have not yet been refreshed when they are operated. However, this only applies to the startup phase.

### On Demand

An address is read from the bus on demand. A request can only be generated in the GALILEO Runtime program. There are many different types of requests which can only be generated by the GRS (GALILEO Runtime System). One example is the saving of a recipe! A tag that is used in a recipe and is selected on demand is read again before the recipe is saved. A status request is sent to the appropriate address. This is normally not used in this way!

## 4.2 DATE TIME SYSTEM MESSAGE



The system messages EIB\_Date and EIB\_Time must be used in order to transfer a time synchronization from EIB to the touch panel! EIS3 and EIS4 data types are used!

### 4.2.1 ACCURACY

The GALILEO runtime is a loop system in which certain operations (mask change, recipe download etc.) may block communication for milliseconds. The accuracy of the synchronization is therefore in the seconds range.

The runtime has the following behavior in order to prevent continuous time jitter:

Synchronization to a time telegram is only carried out if this deviates from the local time by 5 seconds.

Synchronization to a date telegram is only carried out if this deviates from the local date.

### 4.2.2 CONSISTENCY PROBLEMS

Consistency problems may occur due to the fact that time (EIS 3) and date (EIS 4) are not sent simultaneously on the bus but in succession. The time change and date change at midnight is particularly problematic.

The runtime has the following behavior in order to prevent these consistency problems:

If the time and/or date telegrams occur at midnight local time, these are not synchronized until after midnight. Midnight is defined as 23:59:30 to 0:0:30. The time message is updated.

If a time telegram is received and the date telegram is not addressed, the time is synchronized.

If a date telegram is received and the time telegram is not addressed, the date is synchronized.

If a time telegram is received and the date telegram is addressed, the system waits for a date telegram.

- The time telegram is updated here but not synchronized!
- If a date telegram is not received within 2 to 3 seconds, the time is synchronized.
- If a date telegram is received, time and date are synchronized.

If a date telegram is received and the time telegram is addressed, the system waits for a time telegram.

- The date telegram is updated here but not synchronized!
- If a time telegram is not received within 2 to 3 seconds, the date is synchronized.
- If a time telegram is received, time and date are synchronized.

### 4.2.3 CONFIGURATION NOTES

To prevent problems, the following rule must be observed for configuration:

*No date telegram must be received on the panel from 23:59:30 to 23:59:59.*

If this rule is not observed, the incorrect date may be set. This will occur if no other date telegram is received from 0:0:0 to 0:0:29.

Synchronization once a day is sufficient for the runtime. It should be ensured that no time-dependent panel functions occur for several seconds around the synchronization time. Furthermore, as

## 4 Entering a group address

mentioned above, accuracy will suffer if the panel is operated during the synchronization process. Ideally, the synchronization should take place during the early hours of the morning.

### 4.2.4 DATE TIME SYNCHRONIZATION ON SYSTEM START

The two Time and Date system messages are not read when the runtime is started up. However, use the following procedure if this is required:

Bus initialization "At Startup" see 4.1

## 5 CENTRAL COMMANDS

An EIB network allows a bus station to assign the same function to several group addresses. For example, if a single lamp in a room is controlled with address 1/1/1, it can also belong to a group of lamps that are controlled with group address 1/1/10. Calling group address 1/1/10 would thus address all the lamps in this group. This must be made clear in a GALILEO project.

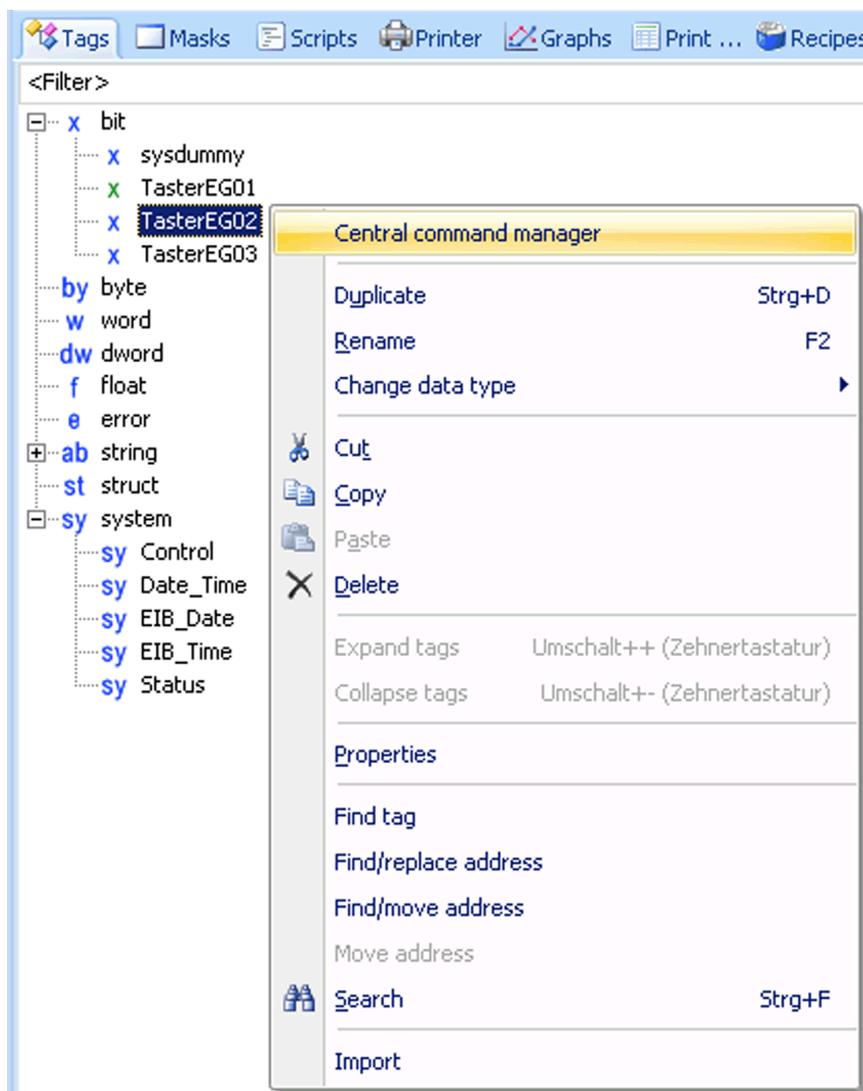
The term 'Central Command' was thus created in GALILEO. In the above example, 1/1/10 would then be a central command because it can address several bus stations simultaneously.

### 5.1.1 CENTRAL COMMAND MANAGER

Sets up the dependency of an EIB address to group addresses!

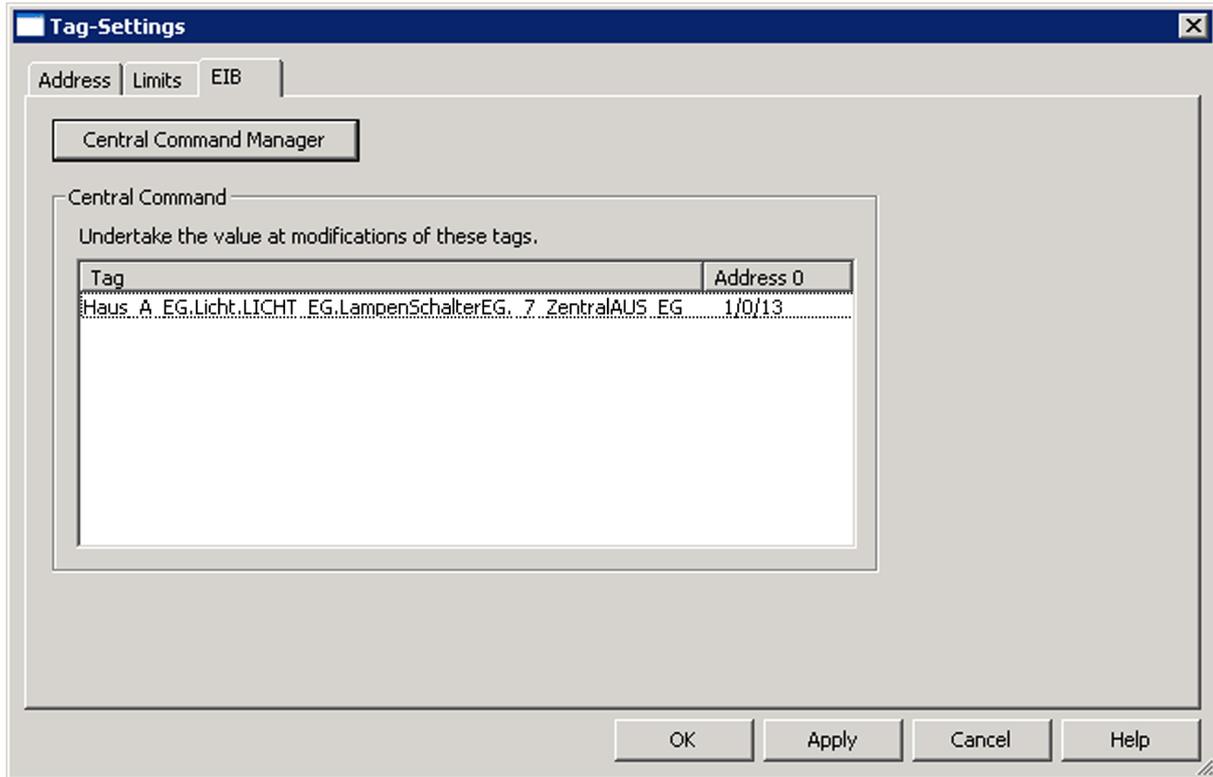
The Central Command Manager can be called from 2 different places.

By right-clicking a tag:



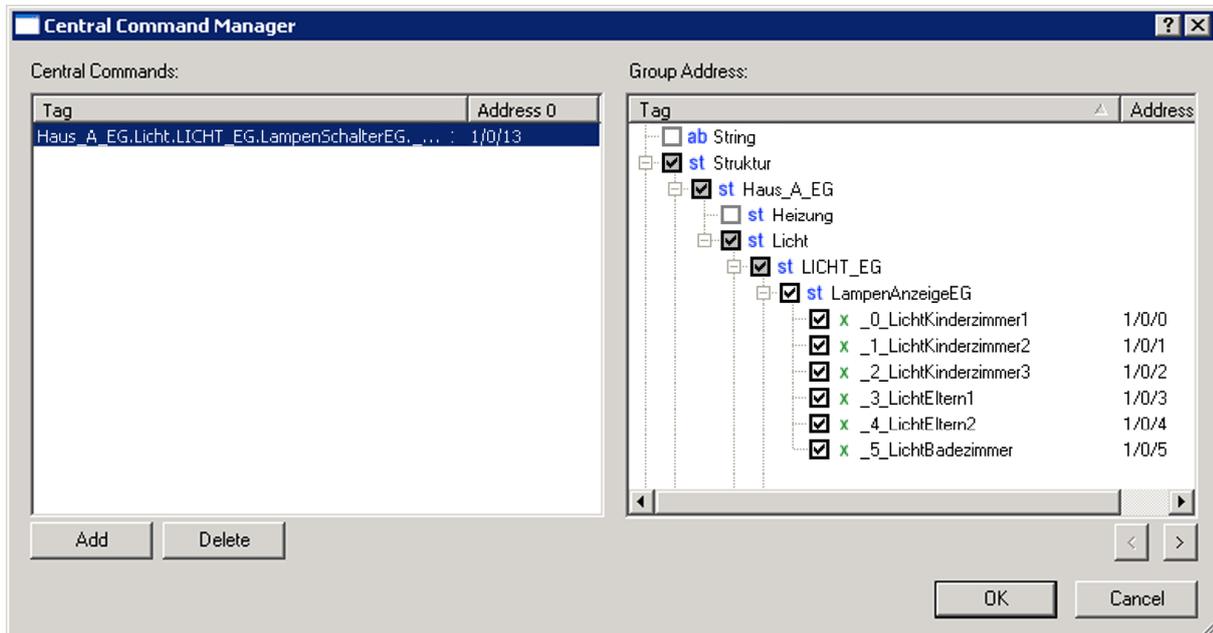
## 5 Central Commands

Or in Tag Properties on the EIB tab



Central commands: The use of this tag by a central command is indicated!

The central command is first declared with the Add button. This is followed by the group addresses that are assigned to the central command.



In the example, Display All Lamps is used. This can then be confirmed with OK and the operation is completed.

**Note:**

**If a central command is called in GALILEO, only this group address is written to the bus. The group addresses assigned to it are not written to the bus.**

## 6 ERROR MESSAGES

The following error messages may appear in a red bar on the display during the runtime:

### **10 : No power ! Bus - Cable not connected ?**

Bus cable not plugged in or faulty.

### **40 : EIB bus overload at write**

The communication card could not send the last write job to the bus as it is overloaded.

### **41 : EIB bus overload at read**

The communication card could not send the last read job (only framing) to the bus as it is overloaded.

### **50 : Object type not supported**

An object was designed in GALILEO which is not supported by the communication card, such as a structure with 5 bits. This type of object is also not supported by EIB.

**Note:**

**A red Error LED and a green Active LED are provided on the front of the communication card.**

**The green LED indicates the internal communication with the touch panel. This should always flicker or stay lit.**

**The red LED indicates bus access faults. This should never be lit.**

## 7 UPDATES

The EIB2-TP communication card is provided with a Flash program memory. This allows a newer program version to be written to the card at any time. The following two program sections are relevant here:

**BC3\_EIB.BIN** Program loader

**EIB2-TP.BIN** Program (the actual EIB communication driver)

### Procedure:

1. The two program sections are copied to the RUNTIME directory of GALILEO. Make copies of existing drivers if necessary.
2. Recompile the project and carry out a download.
3. Switch off the panel and set the PRG/RUN jumper on the communication card to PRG. Re-insert the card and switch on the panel.
4. The program loader is then updated first. Follow the on-screen instructions.
5. Switch off the panel and set the PRG/RUN jumper to RUN.
6. Switch on the panel again. The new communication driver is then loaded onto the card automatically. This only occurs on the first power up after the program loader is reprogrammed.
7. The communication card is then ready for operation.

### Caution!

**The panel must not be switched off under any circumstances during programming. Therefore follow the instructions on the touch screen without fail. Power failures during reprogramming may make it necessary to send the card to Eaton Automation for repair.**

## 8 Change List

### 8 CHANGE LIST

#### 8.1 DRIVER VERSIONS

Version	Date	Modifications
4.03	11.07.2003	WR