USER'S MANUAL

MasterBus FireCAN Interface

Interface from MasterBus to FireCAN

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1 GENERAL INFORMATION

1.1 USE OF THIS MANUAL

This manual serves as a guideline for the safe and effective operation of the MasterBus FireCAN Interface, to be called *FireCAN Interface* further in this manual.

Keep this manual at a secure place!

1.2 GUARANTEE SPECIFICATIONS

Mastervolt guarantees that this product was built according to the legally applicable standards and stipulations. If you fail to act in accordance with the regulations, instructions and stipulations in this user's manual, damage can occur and/or the product will not fulfil the specifications. This may mean that the guarantee will become null and void.

1.3 LIABILITY

Mastervolt can accept no liability for:

- consequential damage due to use of the FireCAN Interface;
- possible errors in the manuals and the results thereof;
- Use that is inconsistent with the purpose of the product.

CAUTION!
Never remove the identification label.

1.4 CORRECT DISPOSAL OF THIS PRODUCT (Waste Electrical & Electronic Equipment)

This product is designed and manufactured with high quality materials and components, which can be recycled and reused. When this crossed-out wheeled bin symbol is attached to a product, it means the product is covered by the European Directive 2012/19/EU.
Please be informed about the local separate collection system for electrical and electronic products.
Please act according to your local rules and do not dispose of your old products with your normal household waste. The correct disposal of your old product will help prevent potential negative consequences to the environment and human health.

2 HOW IT WORKS

2.1 COMMUNICATION

The FireCAN Interface forwards MasterBus information to the FireCAN network.

The information of one battery charging device will be shared on the FireCAN network. The battery charging device can be a battery charger or a charger/inverter combination(Combi).

If your MasterBus network has only one charging device and the interface is in "Auto" mode, the FireCAN interface will automatically start communicating the data of this device and not require any configuration.
By default the value "Auto" mode is on.

3 CONFIGURATION

This interface can be configured via MasterBus on the Configuration page. Configuration is done on a MasterView display or via MasterAdjust PC software.

3.1 LANGUAGE & DEVICE NAME

The language and the device name can be configured in the General group.
The table 1 shows the general MasterBus configuration.

Configuration page		Default	
GENERAL			
Language	Set the FireCAN Interface menu language	English	See specifications
Name	Any name with 12 characters max	INT FireCAN	12 characters max

Table 1: Setup of Device configuration

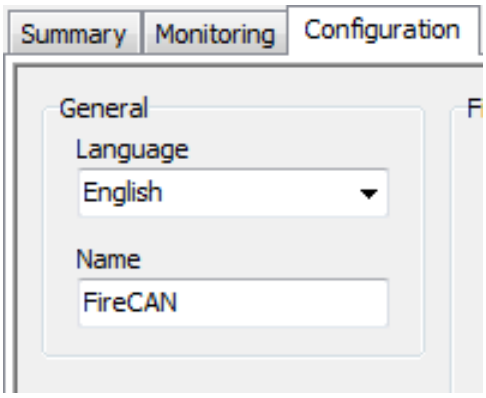


Figure 1: General configuration in MasterAdjust

3.2 FIRECAN

In the FireCAN group on the configuration page you can configure the FireCAN settings. When the “Auto” checkbox (see figure 2 (a)) is activated the configuration is done automatically. Otherwise the configuration has to be done manually.

Use Auto configuration when you have a MasterBus network with only one charging device

If you have more than one charger and want to transmit information of all chargers you will need to use one FireCAN interface for each charging device.

3.2.1 Auto configuration

In Auto configuration the FireCAN will find a charging device on the MasterBus and set the configuration parameters accordingly. Table 2. shows all the possible charging devices.

Charging devices	Article number
Mass Combi Ultra 12/3000	38013000
Mass Combi Ultra 24/3500	38023500
Mass Combi Ultra 48/3500	38043500
Mass Charger 24/15-2	40020156
Mass Charger 24/25-2	40020256
Mass Charger 24/25-2 DNV	40720266
Mass Charger 24/50-2	40020506
Mass Charger 24/75	40020756
Mass Charger 24/100	40021006
Mass Charger 24/50-3ph	40031010
Mass Charger 24/100-3ph	40031006
Mass Charger 48/25	40040256
Mass Charger 48/50	40040506
Serial interface with Mass Combi	77030450
Combi interface with Mass Combi	77030475
ChargeMaster 12/25-3	44010250
ChargeMaster 12/35-3	44010350
ChargeMaster 12/50-3	44010500
ChargeMaster 12/70-3	44010700
ChargeMaster 12/100-3	44011000
ChargeMaster 24/12-3	44020120
ChargeMaster 24/20-3	44020200
ChargeMaster 24/30-3	44020300
ChargeMaster 24/40-3	44020400
ChargeMaster 24/60-3	44020600
ChargeMaster 24/80-3	44020800
ChargeMaster 24/100-3	44021000

Table 2: Overview of charging devices recognized in Auto mode

The configuration parameters can be viewed but not changed in Auto mode. The automatic configuration will always choose the default Node ID of 16 for the FireCAN network. If you have more than one charger and want to transmit information of all chargers you will need to use a sequence of Node ID’s on the FireCAN network..

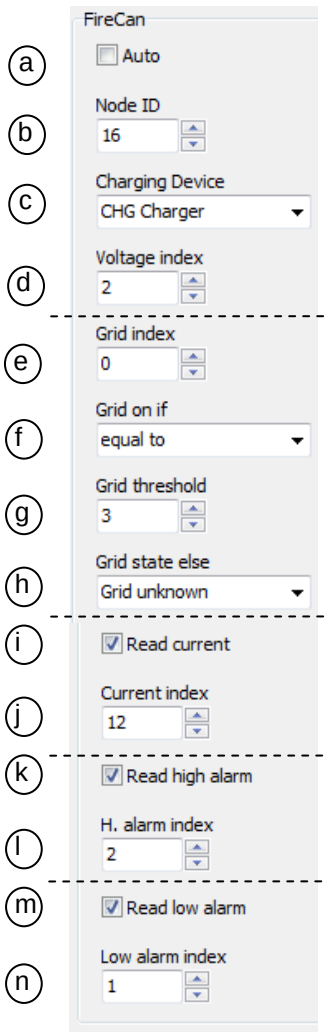
A new charging device will be selected when the selected device is not responding.

3.2.2 Manual configuration

In Manual configuration (“Auto” not activated) you have to make all the configurations yourself.
The easiest way is to use MasterAdjust,
see Figure 2 for more details. Some data fields require you to enter an index. See paragraph 3.5 on getting this information from MasterAdjust.

A quick way of only configuraring 1 charger in a Masterbus network with multiple charging devices is;

1. Connect only one Charging device, by removing the other devices from the MasterBus.
2. Select Auto, and wait until the configuration is automatically made for the Charging Device.
3. Uncheck the Auto mode, which prevents the FireCAN interface from switching to another Charging Device.
4. Reconnect the other Charging Devices.



FireCAN Configuration

a. If Auto is selected all other settings in this group are set automatically.
b. Select the Node ID on the FireCAN network.
c. Select the Charging device of which the data will be shared on the FireCAN network
d. The FireCAN interface will read the battery voltage from this index on the monitoring page of the charging device
e. The FireCAN interface will read information about the Grid availability from this index on the monitoring page of the charging device.
f. The Grid will show “On” whenever the following expression is true: Information from (e.) combined with selected logic (f.) and threshold (g.)
g. Select the threshold to be used in the expression evaluation of (e & f.). For example: if grid index points to a field which shows a value of 230V input voltage shown on the charger, and “Grid on if” is set to “larger than” you can select a threshold of 115V. If the Grid voltage is larger than 115 the Grid will be shown on the FireCan as Available.
h. If the expression as described in (f.) is NOT true, the grid will show state as selected here.
i. Choose if the FireCAN interface will read and transmit information about the charging current of the charging device
j. The FireCAN will read the charging current output of the charging device from this index. This is the index on the monitoring page
k. Choose if the FireCAN interface will read the alarm status for “Battery Voltage High”
l. The FireCAN will read the status of “Battery Voltage High” from this index. This is the index on the Alarm page.
m. Choose if the FireCAN interface will read the alarm status for “Battery

Figure 2: FireCAN Interface configuration example and explanation

3.3 INFORMATION TRANSMITTED ON FIRECAN

The following information is transmitted on the FireCAN network:

Grid availability: Information about grid availability is shared on the FireCAN network. This information is determined by applying some logic. See Figure 1. E/F/G/H for more information.

Charging status. The charging status will output ON if:

- "Read charging current" is selected and the charging current is larger than 0.05A.

Charging will output OFF if:

- "Read charging current" is selected and the charging current is lower than 0.05A or
- If "Read charging current" is not selected and there is no "Grid available"

Charging will output Unavailable when none of the above criteria are met.

Charging complete will always output Unavailable; as this information can never be guaranteed. For example a loose battery connection or a blown fuse can give the impression of a battery not accepting current and indicating a complete charge.

Battery voltage read from the charging device.

High voltage alarm.
High voltage alarm will output ON if

- the "Read high alarm" is selected and the alarm at high alarm index is ON (or 1) or if
- "Read high alarm" is not selected and the "Battery voltage" is between 15 and 18V or is above 30V.

The High alarm status will output OFF if:

- the "Read high alarm" is selected and the alarm at high alarm index is OFF(or 0)

High alarm will output Unavailable in all other cases.

Low voltage alarm works in the same manner as the High voltage alarm. The voltage window is below 10V and between 18 and 20V.

3.4 FAULT CODES

The last 10 fault codes are saved in the FireCAN interface. These codes can be reviewed via MasterBus and via the FireCAN network.

Every new fault is stored in location 1, the codes move one position up. When there are more than 10 faults location 10 is lost.

Possible Fault codes:

- 501: Indicates a low voltage of the battery. This fault is logged when the charging device shows a low voltage alarm.
- 502: Indicates an over voltage on the battery. Also indicated by an alarm of the charging device.

All 10 fault code locations can be reset via the FireCAN network.

3.5 EXAMPLE OF FINDING INDEX OF FIELD

A Index number can be found by hoovering your mouse pointer over a data field in the monitoring page or alarm page.
In figure 3 an example is shown on how to find the index of a specific data field

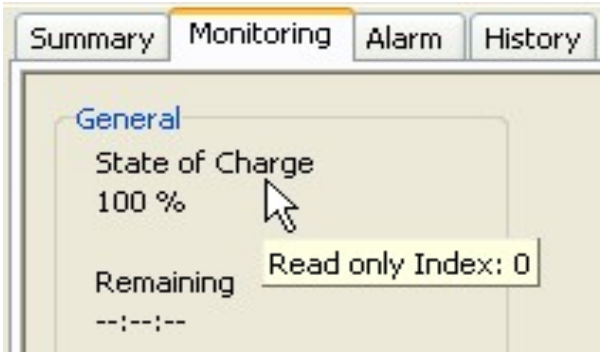


Figure 3:
MasterAdjust reveals the Index number of a valiable when hoovering over it.

4 INSTALLATION

See figure 4 for the FireCAN Interface connections.

1. CAN_High
2. CAN_Low
3. CAN_Ground
4. Communication LED for MasterBus and FireCAN

MasterBus

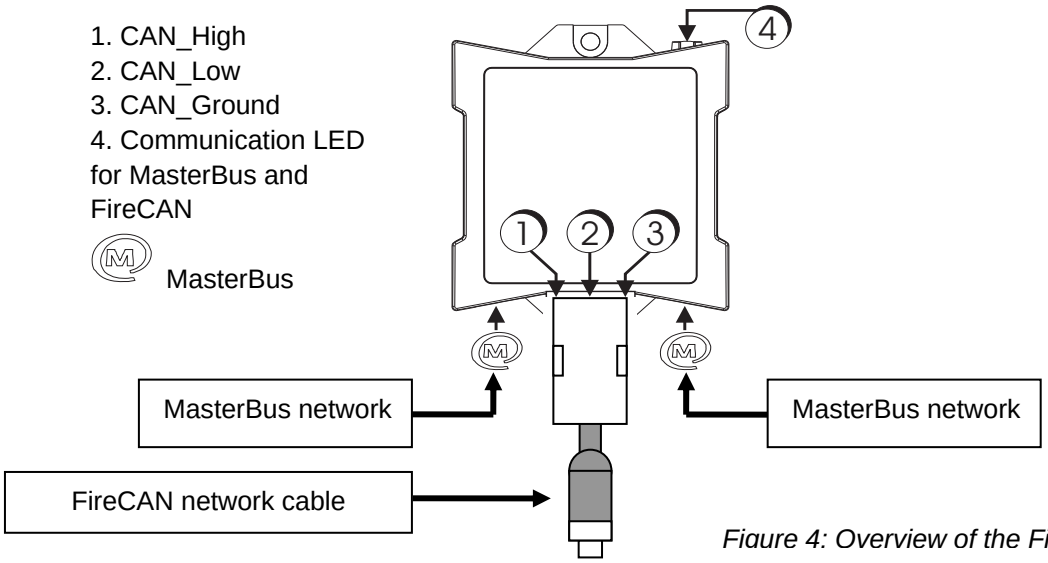


Figure 4: Overview of the FireCAN Interface

5 SPECIFICATIONS

Model:	MasterBus – FireCAN interface
Article number:	77032400
Delivery also includes:	FireCAN cable (length: 100mm), MasterBus Terminating device, User's manual
Function of instrument:	Interface between MasterBus and FireCAN
Languages available:	English, Nederlands, Deutsch and Français
Current consumption:	<40 mA
MasterBus Powering:	No
Din rail mounting:	Yes, Din rail 30 mm [1.2 inch]
Protection degree:	IP 21
Dimensions:	66 x 78 x 32 mm [2.6 x 3.1 x 1.3 inch]; see drawing below
Weight:	Approx. 70 gr [0.15 lb] excluding cable
Maximum units	5 (Maximum number of MasterBus to FireCAN interface in one FireCAN network)

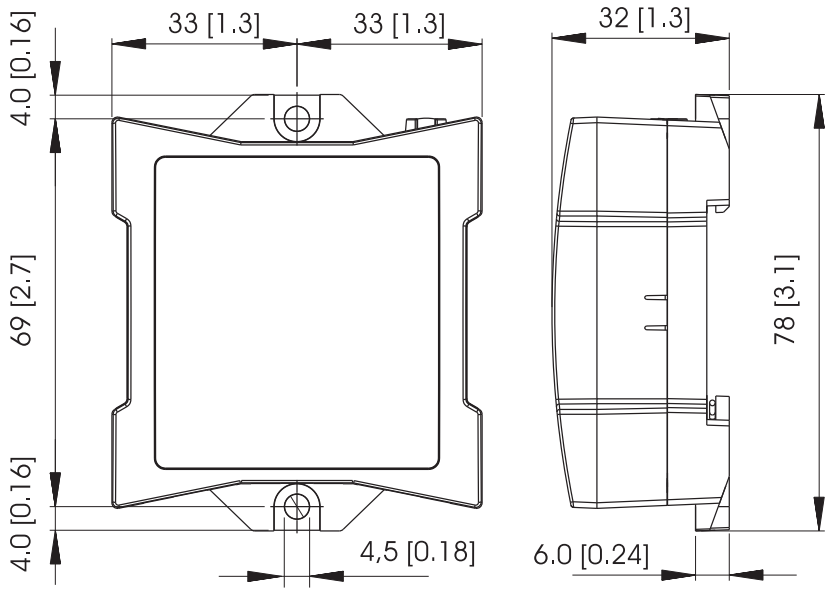


Figure 5: Dimensions in mm [inch]

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