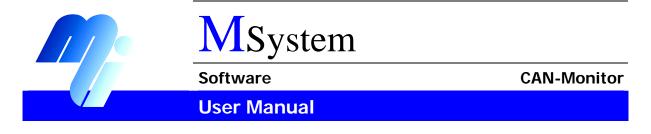
efesotomasyon.com - Klockner Moeller - inverter



CAN-Monitor





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Software	User Manual CAN-Monitor
	Proper use

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 Micro Innovation AG.

Warning

No warranty claims will be recognised 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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	General

1 GENERAL

1.1 AIM AND PURPOSE OF THIS DOCUMENT

This document describes the use of the «CAN-Monitor» software for the diagnostics of the "Onboard CAN-Bus" of MICRO PANELS with Windows CE.

1.2 LIST OF DOCUMENTS

	Document	Doc. No.
[1]	Installation instructions - General wiring instructions	M000778
[2]	System description, Windows CE Image Version x.xx	M000174
[3]	System description, Networks in Brief	M000138

(this list of documents is not final)

User Manual CAN-Monitor Installation

2 INSTALLATION

The «CAN-Monitor» is an independent software package and is **not** part of the standard package. The product must be purchased once and can be installed for permanent use on any MICRO PANEL with Windows CE.

Refer to your "MICRO PANEL device description" for further information on connecting, commissioning and operating the MPI and Ethernet interface.

Permanent use:

The product can be used simultaneously with the Galileo R untime S ystem (GRS) without any limitation on the runtime.

It is assumed that the following software is already installed and that you are familiar with its operation:

• GALILEO HMI programming software

Refer to the Galileo documentation or the Online Help for more information on Galileo and GRS.



From the GALILEO version 7.1.0, GALILEO is recognized the software «CAN-Monitor» as a CE component and it will be added automatically to the CE configuration file <projectname>.INI.

If you use a GALILEO version < 7.1.0, the files in the directory «CAN-Monitor» must be copied manually into the GALILEO component directory.

- C:\Programs\Micro Innovation\Galileo\Component\ARM\<...>
- C:\Programs\Micro Innovation\Galileo\Component\X86\<...>

Then the software component «CAN-Monitor» can be activated in GALILEO via <Configuration>, <CE Configuration >. With a subsequent project download the software components for the target system will be installed.

2.1 SCOPE OF DELIVERY

Designation	
«CAN-Monitor» software incl. electronic documentation	

2.2 SYSTEM REQUIREMENTS

2.2.1 PROGRAMMING PC

Programming PC	Operating system
- GALILEO HMI programming software from version 5.2.4	Windows 2000, Windows NT, Windows XP

2.2.2 TARGET SYSTEM

Target system	Operating system (OS)
- MICRO PANEL with "Onboard CAN-Interface"	Windows CE
	Image Release \geq 2.12.0 (x)

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2.3 INSTALLATION ON THE PROGRAMMING PC

The «CAN-Monitor» Setup Wizard will be launched automatically once the installation CD is inserted in the CD drive. If the Setup Wizard does not launch automatically, run the file "CanMonitorSetup.exe" on the installation CD.

Select the desired language from the drop-down menu.

Click [OK].

Select Setup Language 🛛 🛛			
12	Select the language to use during the installation:		
	English		
	OK Cancel		

Confirm the subsequent dialog by clicking [Next >].

🕞 Setup - CAN-Monitor			
	Welcome to the CAN-Monitor Setup Wizard		
	This will install CAN-Monitor on your computer	8	
	Setup will extend your existing Galileo installation with the 'CAN-Monitor' component.		
	Click Next to continue, or Cancel to exit Setup.		
	Next >	Cancel	

Installation

User Manual CAN-Monitor Installation

Software

Important installation information appears. Confirm the subsequent dialog by clicking [Next >].

🐻 Set	up - CAN-Monitor		
Inf	formation Please read the following important informa	tion before continuing.	
	Installation info fo	r CAN-Monitor	
	Standard installation: - CAN-Monitor to directory: - Documentation to directory: - CE-Files to directory: (The user has to copy the directory to t in the documentation)	.\CAN-Monitor .\Documents .\Files he target system as described	
Micro Ir	novation AG	< Back Next >	Cancel

The following dialog will ask you to select an installation directory. The selected directory must contain a Galileo installation.

Confirm the dialog by clicking [Next >].

🚏 Setup - CAN-Monitor	_ 🗆 🗙
Select CAN-Monitor Installation Location Where should CAN-Monitor be installed?	
Setup will install CAN-Monitor into the following folder.	
To continue, click Next. If you would like to select a different folder, click Browse.	
C:\Programme\Micro Innovation\CAN-Monitor Browse	
At least 2.5 MB of free disk space is required. Micro Innovation AG	
< Back Next > C	Cancel

Software

Select the directory in which the program shortcut will be created. Confirm the dialog by clicking [Next >].

🛱 Setup - CAN-Monitor
Select CAN-Monitor Start Menu Folder Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Micro Innovation\CAN-Monitor Browse
Micro Innovation AG
< Back Next > Cancel

Confirm the subsequent dialog by clicking [Install].

📅 Setup - CAN-Monitor	
Ready to Install Setup is now ready to begin installing CAN-Monitor on your computer.	
Click Install to continue with the installation, or click Back if you want to review or change any settings.	
Destination location: C:\Programme\Micro Innovation\CAN-Monitor	<u>^</u>
Start Menu folder: Micro Innovation\CAN-Monitor	
4	▼ ►
Micro Innovation AG	Cancel

User Manual CAN-Monitor Installation

Software

The next dialog indicates that the installation was successfully completed. Confirm by clicking [Finish].



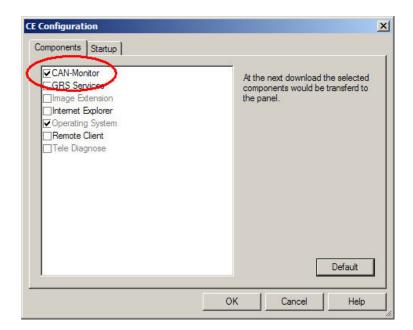
The file ^{CanMonitor.exe} was added to the GALILEO-Installationdirectory under ...\Component\ARM\CE.

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	Commissioning

3 COMMISSIONING

3.1 DOWNLOAD

Activate the «CAN-Monitor» in the CE configuration dialog. The «CAN-Monitor» will be transferred to the target system the next time the project is downloaded.



3.2 LAUNCHING THE «CAN-MONITOR» ON THE TARGET SYSTEM

3.2.1 LAUNCHING THE «CAN-MONITOR» ON DEVICE START

In the CE configuration enter the appropriate command for starting the «CAN-Monitor» automatically when the device is started. The command "START CanMonitor.exe" will cause the device to start the «CAN-Monitor» during power up.

Further information on creating links is provided in the "System description, Windows CE Image Version x.xx" [2].

REM ************************************		
REM REM Create a short cut to the CAN Monit.		
IF exist \StorageCard\Runtime\CanMonito		exe -p CanMonitor.exe
REM REM	12.42.62.6	
REM REM Start CAN-Monitor		
START Can Monitor.exe 💙		
REM REM		
REM		
REM Enable the touch REM START Touch.exe /enable		
NEW START TOUCH.exe /enable		
REM *****		
		•

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User Manual CAN-Monitor

Commissioning

3.2.2 LAUNCHING THE «CAN-MONITOR» FROM WINDOWS CE

If the «CAN-Monitor» is installed on the target system, a shortcut is created on the desktop. Doubleclicking the icon will launch the «CAN-Monitor». The file "CanMonitor.exe" is located on the target system in the directory <StorageCard\Runtime>.

Recycle Bin CanMonitor	
1	
My Computer	
GRSW3	
🔀 Start PLC Re	🥳 🔹 🎘 🍠 11:35 🗹

3.2.3 LAUNCHING THE «CAN-MONITOR» FROM GALILEO

Use a function key to start the «CAN-Monitor» from the GALILEO application. Select the "Execute" function from the group "Internals". Then enter the command "CanMonitor.exe" under Parameter 1. You can then use this function key to start the «CAN-Monitor» from your GALILEO application.

📮 Start.msk		
Start	Function Key	
CAN-Monitor	General Size / Position	Accessibility Text
	?	
	Style:	Text
	Group:	Internals
	Function:	Execute
	String:	Can Monitor.exe 💌
	String:	-BR 500
	Number:	197 (C5h)

Softw	are
001111	u. 0

3.2.4 OTHER COMMAND LINE PARAMETERS

Additional parameters can be added to the "CanMonitor.exe" call. The Baud Rate dialog only appears of no other application is meant to define the initialization of the baud rate. The – BR parameter likewise only has an effect if no other application is responsible for the initialization of the baud rate.

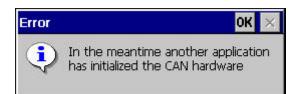
Call	Function
CanMonitor.exe	Start «CAN-Monitor» with Baud Rates dialog
CanMonitor.exe –BR 500	Start «CAN-Monitor» with selected baud rate (e.g. 500 = 500KBaud)
CanMonitor.exe -close	Shut down «CAN-Monitor»

3.2.5 SELECTING THE BAUD RATE

If the "CAN interface" has already been initialized by another application (e.g. MXpro), this baud rate is accepted by the «CAN-Monitor». No dialog is shown. A baud rate setting dialog will appear if the "CAN interface" was not initialized by another application and no baud rate was defined as the parameter when "CanMonitor.exe" is called. One of the supported baud rates can then be selected.

File	Edit	View C	ЮВ	Help		_
ID	Nd)ata		0ir	Count	
	Selec	t Baudr	ate		×	
	500) kBit/s	•	ОК		
	500	Bit/s kBit/s		Cance	<u>s</u>	
•	125	kBit/s kBit/s kBit/s				►
0.0	OB/s	RX 0000	00000	TX 00000	0000 ERR	0000
Sta	rt 🔯 O	. 🦻 C			್ಲಿ 💆 13:52	3

If, however, the initialization from another application program (e.g. MXpro) is started after the «CAN-Monitor» is launched and before the setting in the dialog is confirmed, the baud rate from the other application is accepted and this will be indicated by an appropriate message.



User Manual CAN-Monitor General Operation

4 GENERAL OPERATION

4.1 MAIN SCREEN

This main screen is shown after the «CAN-Monitor» is launched. The main screen is divided into a menu bar, a monitor table and a status bar.

File Edit	View COB Help			_
ID Nd	Data	Count	Time	Period
MT 000	0102	3	36119	2307
\$ 080		2611	292247	100
▲082 02	00 00 00 00 00 00 00 00 🗸	1	33805	
702 02	85	2324	292287	110
602 02	2F 0F 1A 00 00 00 00 00	78	36099	10
582 02	60 0F 1A 00 00 00 00 00	77	36100	10
🌇 182 02	00 00	1	36120	
🏪 282 02	04 00	2956	292247	99
🍓 382 O2	`	X	36120	
🍄 482 O2		1	36120	
	Monitor tak	ble	Men	u bar
	Status bar			
35 COB/s		F	X 00002715 TX 00	0000000 ERR 0000

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4.2 MENU BAR

Menu entry	Function
Save	Save the currently displayed table in an ASCII file.
Exit	Shut down the «CAN-Monitor».
4.2.2 EDIT	
Menu entry	Function
Select All	Select all entries of the currently displayed table.
Invert Selection	Invert the current selection.
Clear Selection	Cancels the current selection.
4.2.3 VIEW	
Menu entry	Function
Status Bar	Show/hide the status bar.
Pause	Activate/deactivate the updating of the display in the Monitor table
Clear Messages	Deletes all entries from the monitor table.
Monitor All	Shows all 2048 COB-IDs (Communication Object Identifier).
Monitor	Shows the COB-IDs currently active on the bus.
Trace	Moves to the display of the last trace in the Monitor table. (deactivated if no trace present)
Columns	Show/hide the visible columns in the Monitor table
View ID, Nd and Data in	Changes the hexadecimal/decimal representation of the COB-ID, Node ID and data in the Monitor table.
Update Rate	Sets the update rate of the display.
4.2.4 COB	
Menu entry	Function
Hide	Selected COB-IDs are hidden in the monitor table. These are shown in italics in "Monitor All" at the end of the table.
Make Traceable	Selected COB-IDs are made traceable. These COB-IDs are then shown in bold type.
Show When Available	The COB-IDs that are hidden or made traceable with "Hide" or "Make Traceable" respectively are shown in the Monitor Table in the normal way. The appropriate COB-IDs must be selected for this.
Trace	Calls up the Trace dialog. (➔ Chap. 5.2)
Reset Counter(s)	Resets the counters of the individual COB-IDs.
Reset Global Counters	Resets the counters in the Status bar.
4.2.5 HELP	
	•

Menu entry	Function
About CanMonitor	Shows the information dialog of the «CAN-Monitor»

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4.3 MONITOR TABLE

4.3.1 CAN TELEGRAM DISPLAY

The information of the relevant CAN telegram is shown in the columns of the Monitor table.

Description
CANopen symbol and COB-ID of the CAN telegram.
CANopen Node-ID (node number) in accordance with the CIA.
Data content of the CAN telegram (max. 8 bytes).
Counter of the individual telegrams received with the same COB-ID.
Relative time stamp (ms) of the received telegram.
Time (ms) since receipt of the last telegram with the same COB-ID

The columns can be shown/hidden using the "View Columns" menu item. The width of the line can be changed by clicking between the columns and dragging in the header line. The table can be sorted by column by clicking the header line of the column selected.

The line can be displayed in normal, **bold** or *italic* type. **Bold** means that the COB-ID is "traceable". *Italic* means that the COB-ID is "hidden" in the View Mode Monitor. The meaning of the CANopen symbols is explained in the following table.

CANopen Symbol	COB-ID	Description
NMT	0	NMT Network management telegram
4	80h	SYNC telegram
8	100h	TIME STAMP telegram
\triangle	80h+Node-ID	EMERGENCY telegram
PDO	180h+Node-ID	PDO1(tx) Process Data Object 1 (to the master)
PDO	200h+Node-ID	PDO1(rx) Process Data Object 1 (to the slave)
PDO	280h+Node-ID	PDO2(tx) Process Data Object 2 (to the master)
PDO	300h+Node-ID	PDO2(rx) Process Data Object 2 (to the slave)
PDO	380h+Node-ID	PDO3(tx) Process Data Object 3 (to the master)
PDO	400h+Node-ID	PDO3(rx) Process Data Object 3 (to the slave)
PDO	480h+Node-ID	PDO4(tx) Process Data Object 4 (to the master)
PDO	500h+Node-ID	PDO4(rx) Process Data Object 4 (to the slave)
SDO	580h+Node-ID	SDO(tx) Service Data Object (to the master)
SDO	600h+Node-ID	SDO(rx) Service Data Object (to the slave)
1	700h+Node-ID	NMT Error Control (Node Guarding)
		According to CANopen undefined COB-ID

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4.3.2 VIEW MODE MONITOR

In this mode, all COB-IDs are displayed that were registered on the bus since the «CAN-Monitor» was started. Older telegrams are overwritten by new telegrams with the same COB-ID.

File	Edit	View	COB	Help						_
ID	Nd	Data				Count	Time	Period		2.0
M 000		01 02	2			3	12039	2310		
\$ 080)					81363	8137139	100		I
▲ 082		00 00	00 00 00	00 00	00 00	5	1944711	. 12795		I
🌳 182		00 00)			1	12040	1		I
🍄 282		0A 00)			81335	8137140	100		I
P 382						1	12040			
48 2						1	12040			
<u>60</u> 582				00 00		77	12020			I
602			1A OC	00 00	00 00	78	12019			I
🦁 702	2 02	05				73945	8137059	110		I
39 0	COB/s							RX 0004bde2	TX 00000000	ERR 0000

4.3.3 VIEW MODE MONITOR ALL

This mode displays all COB-IDs. Older telegrams are overwritten by new telegrams with the same COB-ID.

File E	dit V	/iew COB Help				
ID	Nd	Data	Count	Time	Period	
••• 000		0102	3	12039	2310	
\$ 080			84089	8409706	100	
₫ 082	02	00 00 00 00 00 00 00 00 00	5	1944711	12795	
P 182	02	00 00	1	12040		Hidden
282	02	09 00	84061	84097	100	
382	02		1	12040		Traceable
482	02		1	12040		
582	02	60 0F 1A 00 00 00 00 00	77	12020	10	
602	02	2F 0F 1A 00 00 00 00 00	78	12019	10	
702	02	85	76424	8409716	110	
001						
002						
003						
004						
005						
006						
007						
800						
009						
AOO						
OOB						
35 CO	B/s			R)	(0004e6a0	TX 00000000 ERR 0

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4.3.4 VIEW MODE TRACE

This mode displays those COB-IDs that were previously recorded with the trace. Each line corresponds to a telegram. The time (ms) in the "Time" column starts with the trace recording at 0. The internal numbering of the trace telegrams is displayed in the "Seq#" column. They are always sorted according to the time the telegrams were received.

ile View C	OB H	elp			
Time	Nd	ID Data	Seq#	Period	
0	02	🎦 282 07 00	1		
39	02	V 702 05	2		
100	02	🌇 282 OA OO	3	100	
149	02	V 702 85	4	110	
200	02	🎦 282 07 00	5	100	
259	02	V 702 05	6	110	
300	02	🌇 282 OA OO	7	100	
369	02	V 702 85	8	110	
400	02	🌇 282 00 00	9	100	
479	02	V 702 05	10	110	
500	02	🌇 282 05 00	11	100	
589	02	V 702 85	12	110	
600	02	🌇 282 OA OO	13	100	
700	02	V 702 05	14	111	
700	02	🌇 282 08 00	15	100	
800	02	🏪 282 06 00	16	100	
809	02	V 702 85	17	109	
900	02	🏪 282 06 00	18	100	
919	02	V 702 05	19	110	
1000	02	🏘 282 OC 00	20	100	
1029	02	V 702 85	21	110	
1100	02	🏘 282 07 00	22	100	
4400	- 00	M 200 0F		110	

4.3.5 ERROR MESSAGES

In place of the COB ID, error messages of the "CAN Controller" can be indicated.

Message	Description
Bus OFF	No more communication possible. The "CAN-Controller" stopped bus activity because of too much errors.
Bus ERROR	The bus is disturbed, data is still sent and can be received.
Bus OK	Return from status Bus OFF or Bus ERROR

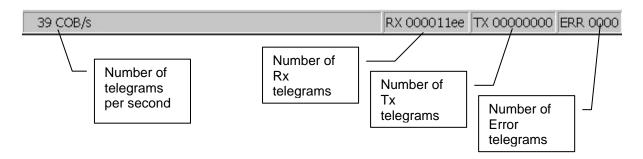


In the mentioned error messages, it concerns usually electric problems, caused through deficient cabling, incorrect bus conclusion or the defect of a bus participant. Further information on Bus state see "CAN-Specification 2.0 Part A".

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4.4 STATUS BAR

The status bar shows the global information. The status bar can be shown or hidden via "View – Status Bar". The counters in the status bar can be reset via "COB – Reset Global Counters".



Creating a Trace

5 CREATING A TRACE

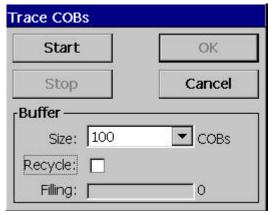
5.1 MAKE COB-ID TRACEABLE

Move to "View Mode Monitor" or "Monitor All". Select the required COB-ID by clicking the appropriate line in the Monitor table. The line will be highlighted in blue. Choose "COB – Make Traceable" to make the COB-ID traceable. The line is then shown in bold type, indicating that the COB-ID is traceable. Choose "COB – Show When Available" to undo the COB-ID setting. Several COB-IDs can be made traceable at the same time.

File E	dit V	/iew	COB H	elp			
ID	Nd	Dat	Hide				Col
282	02	00	Make Tr				1323
702	02	05	Show V	(hen	Available	° [1203
••• 000		01	Trace	e.		_	
2 080				ŝ			1324
🍄 182	02	00	Reset C	ount	er(s)		
882	02		Reset G	lobal	Counter	s	
482	02						

5.2 START TRACE

Choose "COB – Trace..." to start the trace. The dialog with the trace settings will appear.



Element	Description
Start	Start trace recording
Stop	Stop trace recording
ОК	Display trace recording
Cancel	Cancel
Size	Selection of the buffer size (100,500,1000,5000 telegrams)
Recycle	Trace recording always overwrites the last telegrams until the trace is stopped by clicking Stop.
Filling	Progress display of trace

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5.3 DISPLAY TRACE

The trace is displayed after trace recording by clicking [OK].

Trace COBs		
ок		
Cancel		
COBs		
100		

The display then activates "View Mode Trace". Choosing "File – Save" enables the trace to be saved as a comma separated or tab separated ASCII file.

File View C	OB Help				
Time	Nd	ID	Data	Seq#	Period
0	02	🍄 282	06 00	1	
40	02	🦁 702	05	2	
100	02	<mark>ष</mark> 282	<u> </u>	3	100
150	02		e As 💼 💣 🛗 🏢	OK	× 110
200	02	🌇 🔍 1	My Computer		100
260	02	V 🔍			110
300	02	Pop	My Documents 👘 🗎	Гетр	100
370	02		INETWORK 📃 🗎	Windows	110
400	02		Program Files		100
480	02	😻 🗎	Recycled		110
500	02		StorageCard		100
590	02	S	1		110
600	02	🌇 🛄			110
700	02	😻 Na	me: trc_20050504_163	3134	110
700	02	PDO			100
800	02	TX	pe: *.csv		▼ 100
810	02	🤘 👘	*.csv		110
900	02	282	08 (*.tab		100
	22	Med			

6 CHANGE LIST

Revision	Date / Signed	Modification
01	5.12.2005 /As	Initial Version
02	22.10.2009 /MH	Additional installation in connection with GALILEO 7.1.0

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