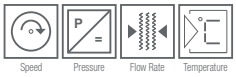

INSTRUCTION MANUAL IM 109-8008 E

Device: **FMP 1836 - with LCD display**
Frequency Transducer for limit value monitoring or recognition of the direction of speed

Content: **Instruction manual**

Rev.-No.: **IM 109 E V1.0-2019-01-25**

Rev.-Nr.: IM 109 E V1.0-2019-01-25

Phone: +49 (0) 6021 – 45 807 -0
Fax: +49 (0) 6021 – 45 807 -0
Esters Elektronik GmbH
Hafenrandstr. 14 · D-63741 Aschaffenburg
eMail: info@esters.de
Internet: http://www.esters.de

User information

- Prior to installing the equipment or before attempting initial start-up, please read this manual thoroughly.
- Please ensure to observe all information and warnings provided in this manual.
- The serial number of the equipment can be found on the identification plate. You will need this information when ordering spare parts. The plate is attached to the outside of the device.
- Installation, start-up and maintenance may only be performed by an electrician. The local guidelines of the place of installation have to be observed.
- Maintenance may only be performed under dead-voltage conditions for personal security reasons.
- In order of guarantee operational safety, only the manufacturer's original spare parts shall be installed.
- Operating the equipment for purposes other than its intended use shall void all warranty claims and product liability. Noncompliance with the intended use refers to but is not limited to improper installation, start-up, operation, maintenance and neglecting the information provided in this manual.
- The device must be integrated into the lightening protection concept of the plant.

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Please ensure to operate this device only in accordance with this manual. Departure from these instructions will void and nullify all warranty claims and jeopardizes the operating safety of the device.

We reserve the right to engineering changes, which may necessitate deviations from the current data provided in this manual. Should you require additional information or questions arise that are not sufficiently covered in this manual, please contact us at the following address:

Imprint

Esters Elektronik GmbH
Hafenrandstr. 14
D-63741 Aschaffenburg
Tel.: +49 (0)6021 – 45 807 -0
Fax: +49 (0) 6021 – 45 807 -0
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eMail: info@esters.de
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1 Introduction

1.1 Operating instructions, general information

These operating instructions are intended for the use of the device and meant to provide support during the installation, operation, and maintenance.

1.2 Goods receipt inspection, transportation, storage

- Ensure the packaging is not damaged!
- Any damaged packaging must be reported to the supplier.
- Retain any damaged packaging until the matter has been resolved.
- Ensure the package's content is not damaged!
- Any damaged part received must be reported to the supplier.
- Retain any damaged goods until the matter has been resolved.
- Use the delivery documents to check the received goods and compare the goods with your order to ensure completeness. For storage and transport purposes, the equipment must be packed with care to prevent damage caused by impact or humidity. Only the original packaging can ensure optimal protection. Furthermore, compliance with all allowable ambient conditions is mandatory.
- If you have any questions, please contact your supplier or the respective distribution centre.

2 Warranty

The devices were built in compliance with current directives and have left the factory in technically flawless condition.
In the unlikely event that you still may have reasons for a complaint and the fault can be traced to a factory error, we shall correct any defects at no additional charge. However, in such case, it is your responsibility to report the damage immediately after detection and/or within our permitted warranty period.

Damage caused due to improper use or as a result of noncompliance with these operating instructions, is excluded from this warranty.

The warranty period is 12 months. Unless otherwise agreed upon, the warranty period for spare parts is 12 months as well. The fulfilment of warranty claims shall not extend the warranty period.

The warranty shall become null and void if the measurement module has been opened, unless otherwise expressly stated in the operating instructions or for maintenance purposes only. This shall also apply if serial numbers have been changed, damaged, or removed.

Any repairs, adjustments or similar tasks necessary besides warranty performances shall be without charge. Other services, including transport and packaging shall be invoiced.

Unless liability is mandatory by law, further claims, in particular claims based on damages that do not concern the delivered components, are excluded.

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eMail: info@esters.de
Internet: http://www.esters.de

Services provided after the warranty period

Of course, we will be pleased to assist you once the warranty has expired. You can reach us directly by calling.

Contact:

Phone: +49 (6021) 45 807 - 0
Fax: +49 (6021) 45 807 - 20
eMail: service@esters.de

3 General information

The 2 Channel frequency transducer FMP 1836 displays all measurands which can be converted to the equivalent parameter frequency by applicable transmitters.
The FMP 1836 is designed for limit value and stand-still monitoring as well as multi-quadrant operation. The device has two frequency inputs, two mA output and 4 freely programmable relays (2 changer, 2 NO switch),
The FMP 1836-8008 is designed for the recognition of speed of two signals, out of phase 90° (4-quadrant operation). The directions of CLOCKWISE and COUNTERCLOCKWISE are connected to the frequency input.
The mA output can be used for the actual speed of the frequencies. The integrated relays show the status of the direction. Additionally one relay is available for limit value monitoring.

Fields of Application:

- Actual value for analog speed control
- Test stands
- Turbines
- Paper, fibre, film, steel and crane industry
- Textile machines
- Generators
- Centrifuges
- Emergency diesel
- Agitators

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Internet: http://www.esters.de

4 Installation / servicing / maintenance

This device has been designed for direct mounting on a DIN rail. The monitor can be mounted directly in a switch cabinet or in a separately available housing. Installation may only be performed by specialist, trained personnel.
Servicing and maintenance activities may only be performed by Esters Elektronik GmbH technicians or by persons trained by Esters Elektronik GmbH.

Contact:

Phone: +49 (6021) 45 807 - 0
Fax: +49 (6021) 45 807 - 20
eMail: service@esters.de

5 Technical specifications

The FMP 1836-8001 is a 2-channel unit, but also can be used as a 1-channel.

The section on technical specifications provides an overview in respect of the series.

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5.1 Input

	WITHOUT SC 500	WITH SC 500*
Input 1 (channel “A”)	1 Hz - 60 NPN	1 Hz - 60 kHz HTL-TTL 1 Hz - 60 kHz PNP 1 Hz - 60 kHz Namur
Input 2 (channel “B”)	1 Hz - 60 NPN	1 Hz - 60 kHz HTL-TTL 1 Hz - 60 kHz PNP 1 Hz - 60 kHz Namur

* The SC 500 (Universal transducer; from NAMUR, PNP, HTL-TTL into a frequency signal) is not a regular part of the device it has to be ordered for each channel separately

5.2 Output

Output 1	0(4) - 20 mA freely programmable (e.g. speed „A“)
Output 2	0(4) - 20 mA, freely programmable (e.g. speed „B“)

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Fax: +49 (0) 6021 – 45 807 -0
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Hafenrandstr. 14 · D-63741 Aschaffenburg
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5.3 Relay

K1 and K2	Changeover contact, 30 V, AC, 1A inductive direction of speed „A“ or customer-specific parameterization using Esters Configuration Tool (direction of speed „A“, „B“, limit value)
K3 and K4	NO contact, 30 V, AC, 1A inductive direction of speed „A“ or customer-specific parameterization using Esters Configuration Tool (direction of speed „A“, „B“, limit value or failure (only K4))

5.4 Types of limit values

Types	- Lower limit - Underrange - Upper limit - Overrange - Band - Notch - Hysteresis

5.5 Electrical values

Accuracy	± 0.05% unit value ± 1 digit at 23°C
Power supply (standard)	24 V, DC ± 3V
Power supply (option N2)	230 V, AC, 10 VA, 48 – 62 Hz
Current consumption	max. 1.25 A, Fuse protection by means of 3A preliminary fuse or inherently safe mains adaptor
Power consumption	max. 30 VA

5.6 Environmental influences

Ambient temperature	-10 to +55°C
Storage temperature	-20 to +85°C
Test voltage	3 kV
Humidity class	E-DIN 40040
Electromagnetic compatibility	acc. to DIN EN 61000
Climatic class	acc. to IEC 60 654-1 Class B2 / EN 1434 Class "C" (no condensation permitted)
Electrical safety	acc. to IEC 61010-1: Environment < 2000 m height above NN
Overvoltage category	IEC 61010-1, Protection class II, Overvoltage category II
Degree of contamination	Degree of contamination 2

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5.7 Mechanical values

Torque clamps	0.15 Nm max.

5.8 Display and housing

Display	LCD-Display
Standard housing DIN rail mounting	Modular clamp housing made from Makrolon Fire classification as per UL 94:V-D 35 mm standard rail as per DIN EN 50022 Dimensions: 100 (W) x 100 (H) x 107 (D) mm Protection class IP 20
Field housing (option M104)	Dimensions: 343 (W) x 330 (H) x 210 (D) mm Wall mounting Protection class IP 65
Total weight	FMP 1836-8008: 480 g FMP 1836-8008 incl. Field housing M104: 3650 g g

5.9 Interface

USB	Mini USB-connection (5-pin, USB 2.0) for configuration

5.10 Software

Esters Configuration Tool	Configuration software for Microsoft Windows

5.11 Interfaces and connecting diagram

5.11.1 Power supply

Before commissioning, ensure that the power supply complies with the specifications on the identification plate.

Follow the safety instructions

Always observe the following safety instructions:

- connect only in switched-off state
- install overvoltage protection in case of overvoltage or voltage peaks

Note
As soon as the device is connected to the power supply, the device is in the measurement mode.

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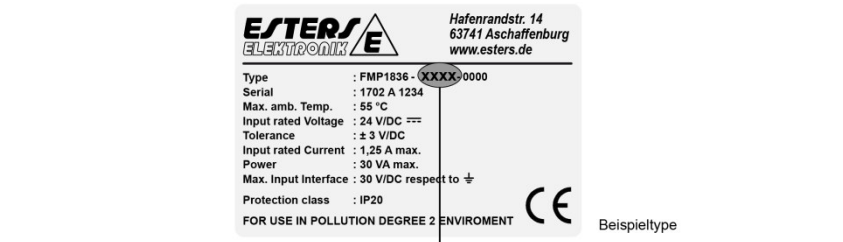
eMail: info@esters.de
Internet: http://www.esters.de

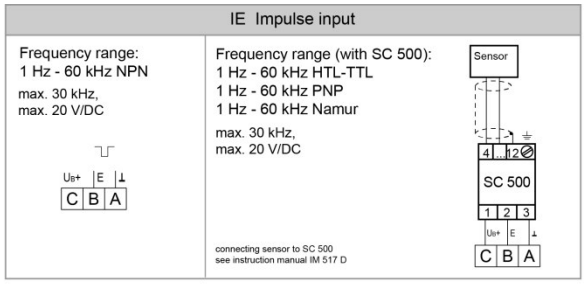
5.12 Connecting diagram

Code - Tabelle FMP 1836

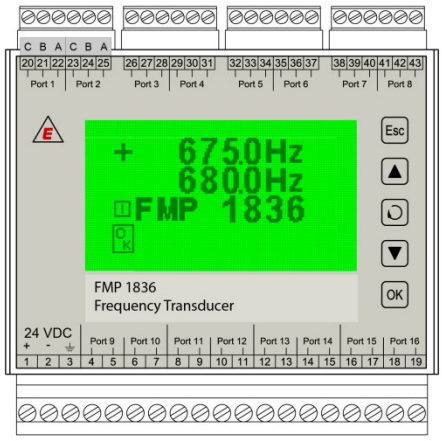


Port / Code	1	2	3	4	5	6	7	8	9	10	11 12	13 14	15	16
	Frequenz "A"	Frequenz "B"							frei definierbar	frei definierbar	frei definierbar	frei definierbar	frei definierbar	Störung*
8008	IE	IE							AA	AA	RW	RW	RS	RS

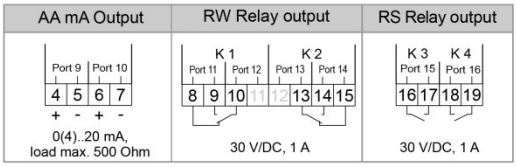
* oder gem. kundenspezifischer Parametrisierung

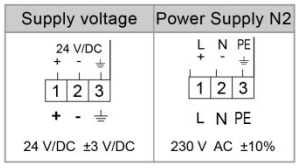


Wiring recommendation: preferably 0,5 mm², max. 0,75 mm²



Wiring recommendation: preferably 1 mm², max. 1,5 mm²





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Fax: +49 (0) 6021 – 45 807 -0
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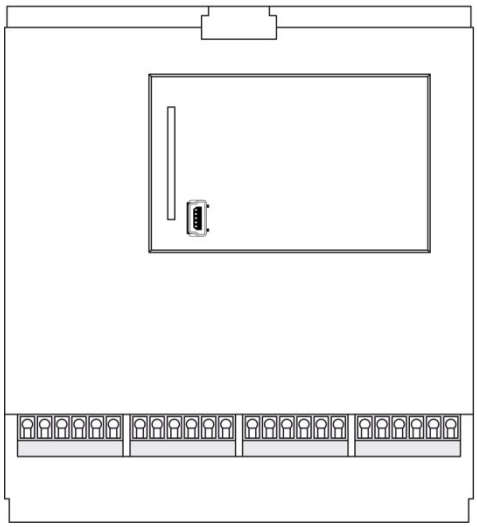
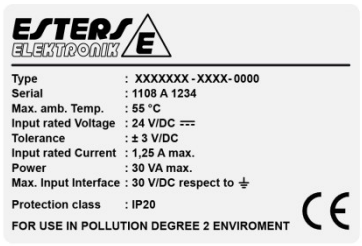
5.13 Interface





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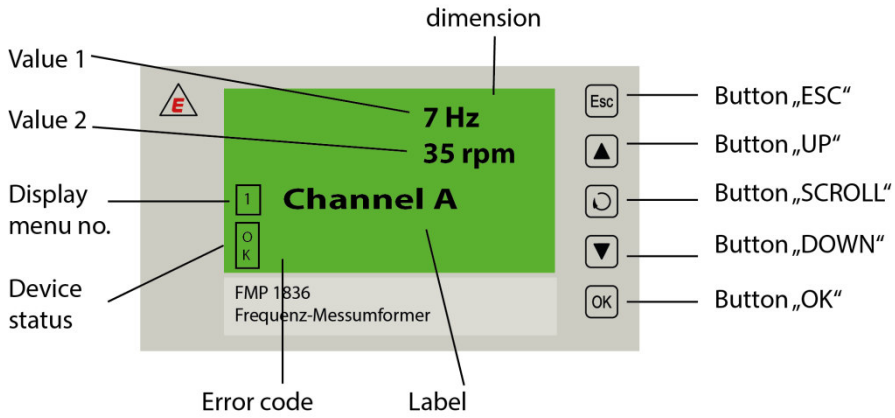
Phone: +49 (0) 6021 – 45 807 -0
Fax: +49 (0) 6021 – 45 807 -0
Esters Elektronik GmbH
Hafenrandstr. 14 · D-63741 Aschaffenburg
eMail: info@esters.de
Internet: http://www.esters.de

6 Display

Layout of LCD display

The following figure provides information on the layout of the LCD display of the device FMP 1836-8008:



Measured value display

Four-line LCD display, whereby lines 1 to 3 show a maximum of 10 digits.

Bezeichnung	Beschreibung
Value 1	freely programmable with software ECT
Value 2	freely programmable with software ECT
Display menu no.	Fixed at no. 1
Device status	**Display device status** **OK:** The device is ready for operation and is running in standard function mode; no errors present. **M:** An application error has occurred, i.e. a function failure was detected. **E:** A system error (hardware defect, powering up error etc.) was detected, i.e. the device can no longer guarantee functionality. Please contact the service department.
Error code	In the event of a system error (= "E"). A 4-digit error code is displayed (list of error codes, see section 8.)
Label	freely programmable with software ECT
Button „ESC“, „UP“, „SCROLL“, „DOWN“, „OK“	The buttons do not have a function with the FMP 1836-8008.All settings are done using the configuration software ECT.

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Esters Elektronik GmbH
Hafenrandstr. 14 · D-63741 Aschaffenburg
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7 Esters Configuration Tool (ECT)

The programming of the FMP 1836-8008 cannot be done on the device directly. For parametrization the device must be connected via USB interface with a computer where the software ECT is running.

7.1 Installation and system requirements

The latest version can be downloaded at the following link:
http://www.esters.de/en/download/sw000.shtml

System requirements:

Operating system:	Windows XP, Windows 7, Windows 8, Windows 10
Driver:	FTDI USB driver V2.08.28 or higher, USB driver for identification of the devices (source: http://www.ftdichip.com/Drivers/VCP.htm) http://www.esters.de/en/download/sw000.shtml#USB
Device firmware:	starting Version V 5.68

- Install the FTDI driver on your computer
- Start the program. The program does not need an installation, it is an executable file.
- Connect the FMP 1836-8008 to the power supply
- Connect the device to your computer via USB

7.2 Overview of the tabs in ECT

The ECT has 8 different tabs with different functions considering the programming of the device:

1) Basic settings
2) Display
3) Frequency inputs
4) Current outputs
5) Changeover contact 1
6) Changeover contact 2
7) N-O-C 1 (NO contact 1)
8) N-O-C 2 (NO contact 2)

The functions of the tabs will be described in the following sections:

Note

- Please note that all changes made in the ECT are **taken over immediately** by the device.
- Exempted are text fields, the entries must be confirmed with the Enter / Return key. After confirmation the entries are taken over by the device.

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Hafenrandstr. 14 · D-63741 Aschaffenburg
eMail: info@esters.de
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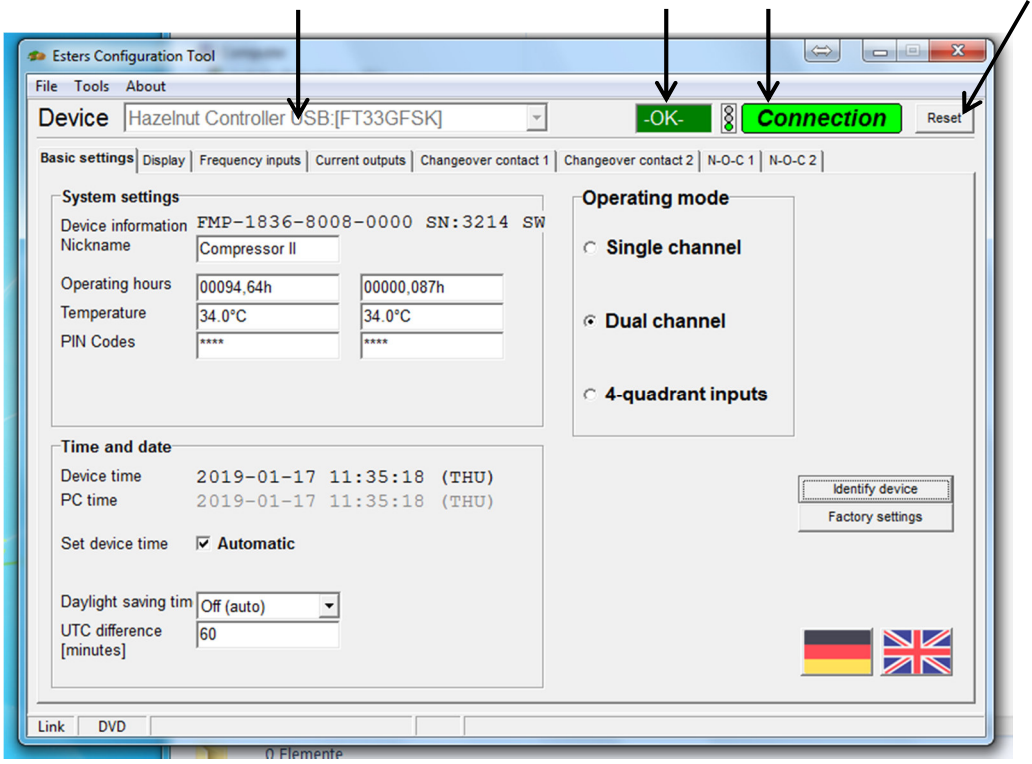
7.3 Basic settings: 1/2 channel operation and 4-quandrant operation

Selection of connected device, in case more them one is connected to the computer

Status of device and connection

Reset/reboot of the device



The following table describes the possible settings:

Designation	Description	editable
System settings		
Device information	Device type, serial number, firmware version	
Nickname	Freely configurable name or affiliation of the device	**x**
Operating hours	1 column: amount of all operating hours 2 column: : amount of all operating hours since last restart	
PIN Code	Define a PIN Codes	**x**
Time and Date		
Device time	Actual time of the device	
PC Zeit	Actual time of the connected PC	
Set device time	Automatic yes/no	**x**

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eMail: info@esters.de
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Designation	Description	editable
Daylight saving time UTC Difference in minutes	Definition of daylight saving time and UTC difference in minutes	**x**
Operating mode	Definition of the required operating mode: - Single channel The device always has 2 channels, but can also be operated in a single channel mode. - Dual channel The 2-channel device processes the data from the 2 frequency inputs. These can be compared with each other and used for limit value monitoring. - 4-quadrant inputs The 2-channel device processes the data from the 2 frequency inputs for recognition of rotation direction.	**x**
Identify device	The display of the device blinks multiple times.	
Factory settings	Reset the device to factory settings. ATTENTION: All Settings will be lost!	
flags	Selection of a flag defines the language of the ECT.	

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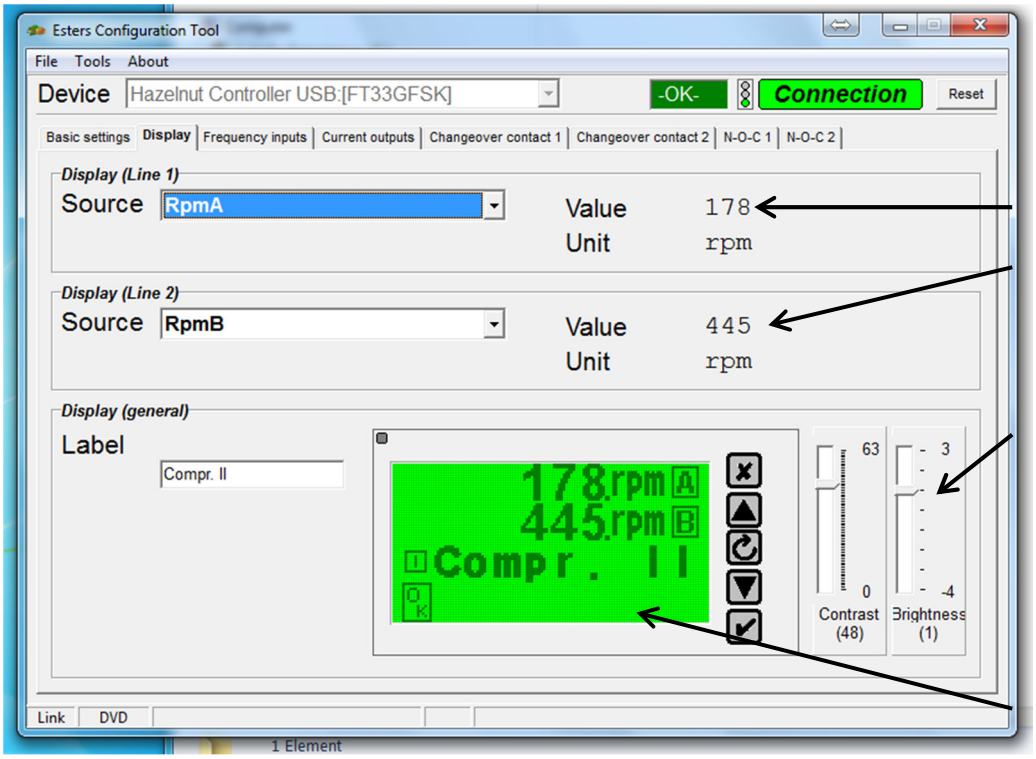
7.4 Display

7.4.1 Display: single and dual channel operating mode

The tab „Display“ is used for defining the values which are shown on the device display.



The following table describes the possible settings:

Designation	Description	editable
Display (line 1) Source	List with all possible values which can be shown in line 1 of the display.	x
Display (line 2) Source	List with all possible values which can be shown in line 2 of the display.	x
Display (general, line 3) Label	Freely definable name.	x
Contrast	Definition of the contrast of the display.	x
Brightness	Definition of the brightness of the display.	x

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Fax: +49 (0) 6021 – 45 807 -0
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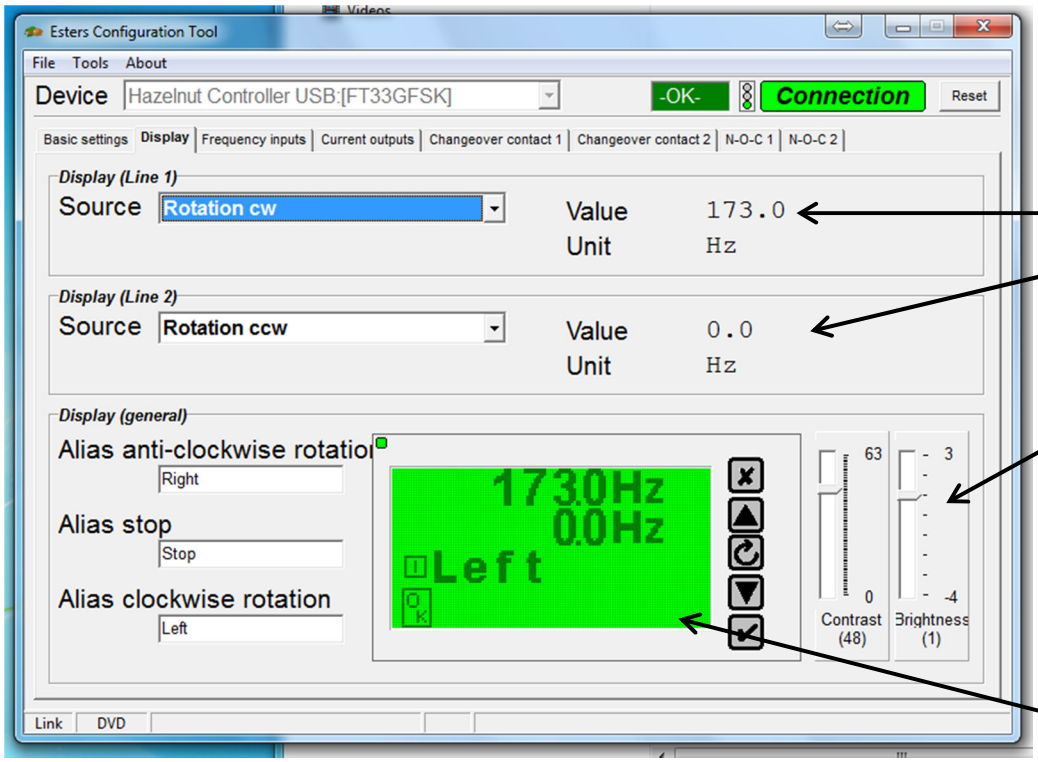
7.4.2 Display: 4-quandrant operating mode



cw = clockwise; ccw = counterclockwise

The following table describes the possible settings:

Designation	Description	editable
Display (line 1) Source	List with all possible values which can be shown in line 1 of the display.	x
Display (line 2) Source	List with all possible values which can be shown in line 2 of the display.	x
Display (general, line 3) Label	Freely definable name for the 3 different aliases.	x
Contrast	Definition of the contrast of the display.	x
Brightness	Definition of the brightness of the display.	x

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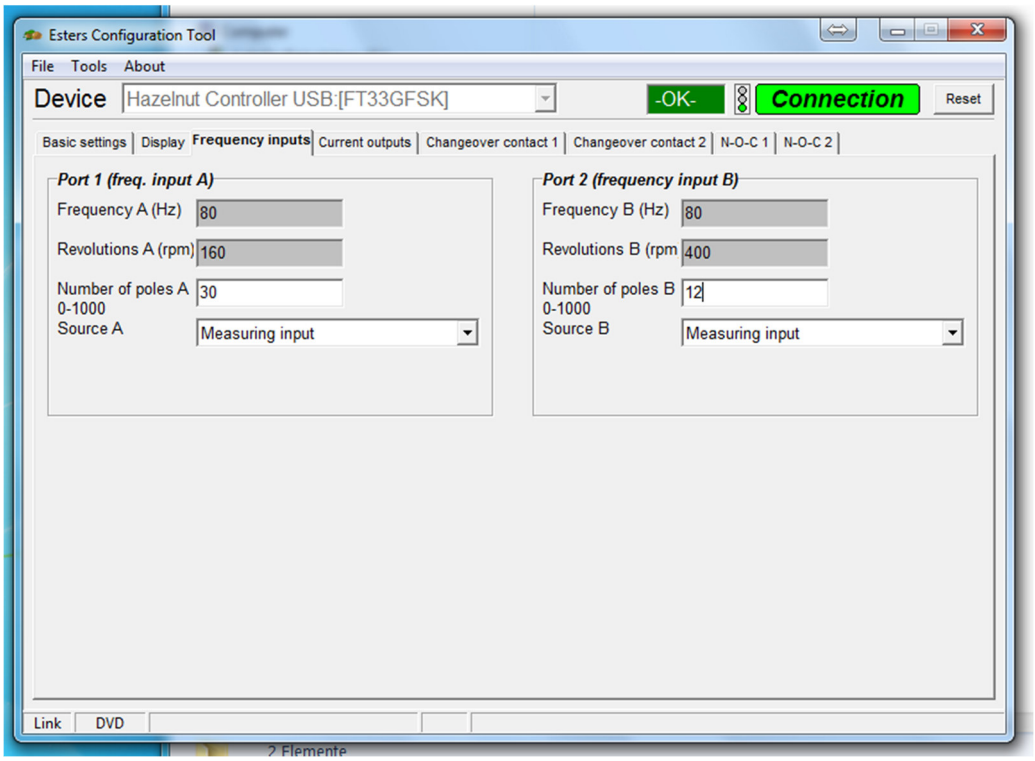
7.5 Frequency inputs

7.5.1 Frequency inputs: single and dual channel operating mode

The image below shows the tab for dual channel operating mode. In the single mode the second channel is not viewed.



The following table describes the possible settings:

Designation	Description	editable
Port 1 (freq. input A)/ Port 2 (freq. input B)		
Frequency A/B (Hz)	Display of the actual frequency in Hz	
Frequency A/B (rpm)	Display of the actual revolution speed in rpm	
Number of poles A/B 0 - 1000	Definition of the number of poles of the installed pole wheel in the range of 0-1000	**x**
Source	Definition of the signal source: - Measuring input - Fixed value (value must be defined in separate text field)	**x**
Fixed value A/B	Definition of the fixed value, if no measured value is available	**x**

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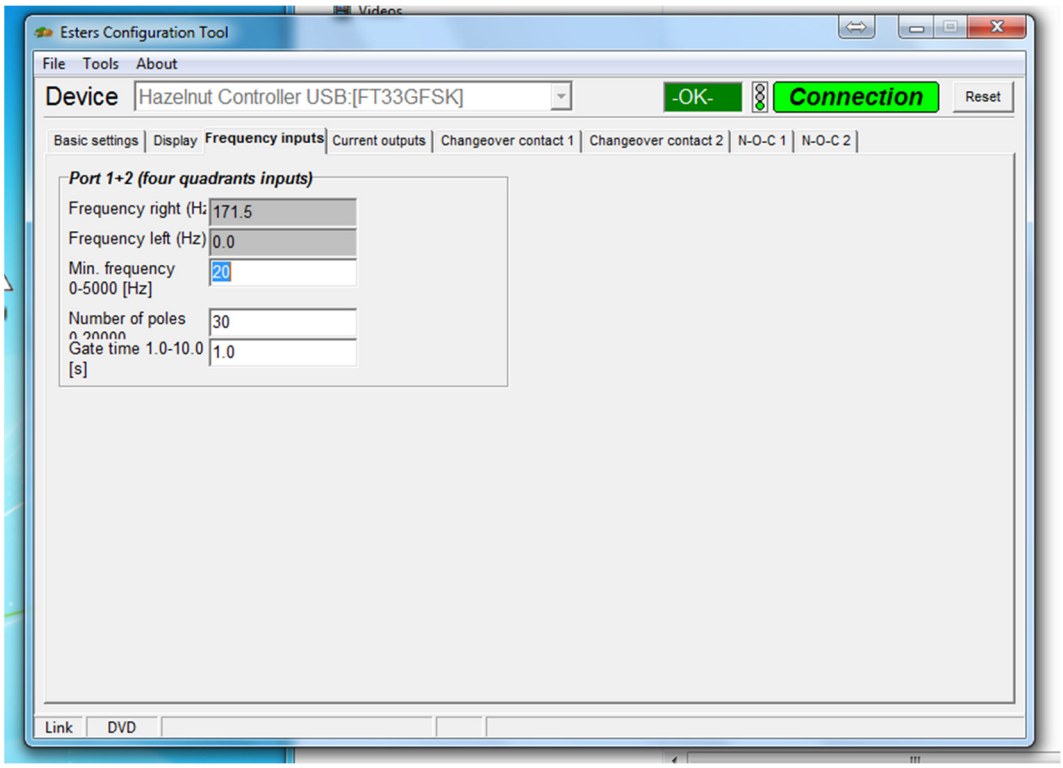
7.5.2 Frequency inputs: 4-quandrant operating mode



The following table describes the possible settings:

Designation	Description	editable
Port 1+2 (four quadrants inputs)		
Frequency right (Hz)	Display of the actual frequency in Hz of the clockwise rotation	
Frequency left (Hz)	Display of the actual frequency in Hz of the counterclockwise/ anticlockwise rotation	
Min. Frequency (Hz) 0 --5000	Definition of the minimal frequency in the range of 0 – 5000 Hz	**x**
Number of poles 0-20000	Definition of the number of poles of the installed pole wheel in the range of 0-20000	**x**
Gate time 1.0 – 10.0 (s)	Definition of the gate time in the range 1.0 – 10.0 sec.	**x**

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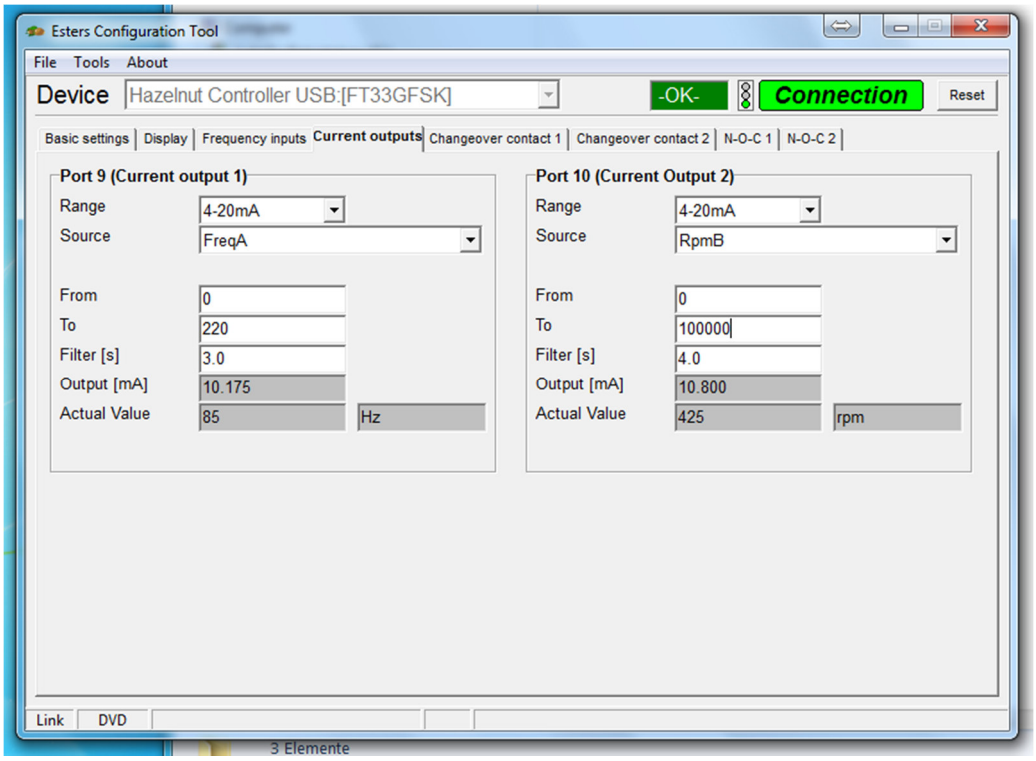
7.6 Current outputs



The following table describes the possible settings:

Designation	Description	editable
Port 9 (Current output 1)/Port 10 (Current output 2)		**x**
Range	Definition of the mA output range	**x**
Source	Definition of the signal source	**x**
From	Definition of the start of the range	**x**
To	Definition of the end of the range	**x**
Filter (s)	Definition of the filter in seconds	**x**
Output mA	Display of the actual mA value	
Actual value	Display of the actual value in Hz	

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Phone: +49 (0) 6021 – 45 807 -0
Fax: +49 (0) 6021 – 45 807 -0
Esters Elektronik GmbH
Hafenrandstr. 14 · D-63741 Aschaffenburg
eMail: info@esters.de
Internet: http://www.esters.de

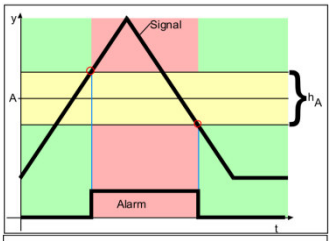
7.7 Relay outputs: limit value

7.7.1 Types of limit values

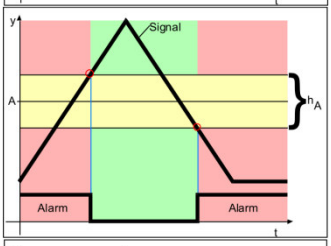
Each relay output is freely programmable. Five types of limit values are included:

OFF

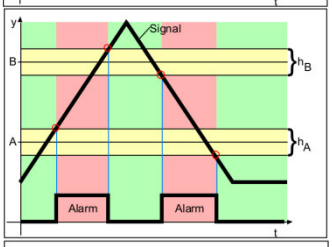
Tuned off



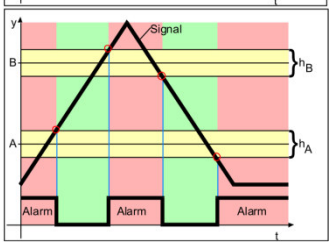
Overrange: alarm if value exceeds the set limit value (only threshold switch A)



Underrange: alarm if value falls short the set limit value (only threshold switch A)



Band: alarm if value is between the limit value range (threshold switch A and B)



Notch: alarm if value is not in between the limit range (threshold switch A and B)

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Fax: +49 (0) 6021 – 45 807 -0
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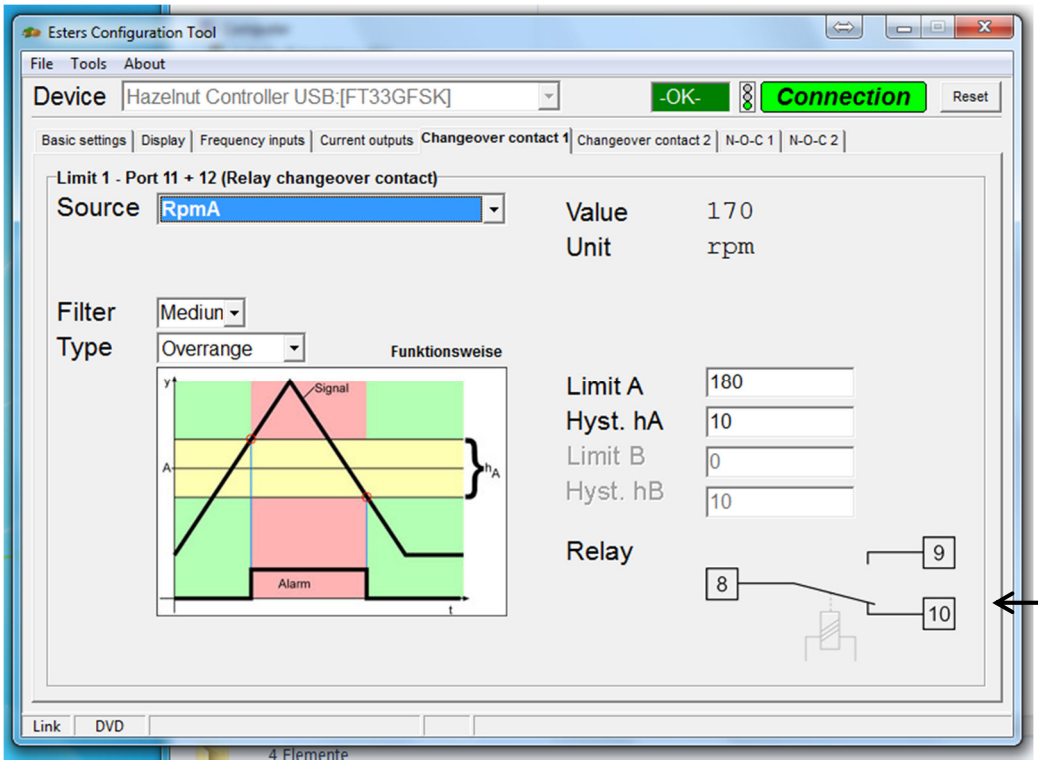
Hafenrandstr. 14 · D-63741 Aschaffenburg
eMail: info@esters.de
Internet: http://www.esters.de

7.7.2 Relay outputs: limit value 1 (Changeover contact 1) and limit value 1 (Changeover contact 2)

The connection for the changeover contact 1 is on port 11 and 12. The connection for the changeover contact 2 is on port 13 and 14.

The limit values are freely configurable, the description for the settings of limit values 1 and 2 is made on the basis of the example of changeover contact 1, and they also apply to changeover contact 2.



The following table describes the possible settings:

Designation	Description	editable
Limit 1 – Port 11 + 12 (Relay changeover contact) **Limit 2 – Port 13 + 14 (Relay changeover contact)**		**x**
Source	Definition of the signal source which applies to the limit value.	**x**
Filter	Additional trigger delay for the defined type of limit value	**x**
Type	Definition of the type of limit value	**x**
Limit A	Definition of the threshold switch of A (see Y-axis)	**x**
Hyst. hA	Definition of the hysteresis of hA	**x**
Limit B	Definition of the threshold switch of B (Y-axis) (only for Band and Notch)	**x**
Hyst. hB	Definition of the hysteresis of B (only for Band and Notch)	**x**

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Hafenrandstr. 14 · D-63741 Aschaffenburg
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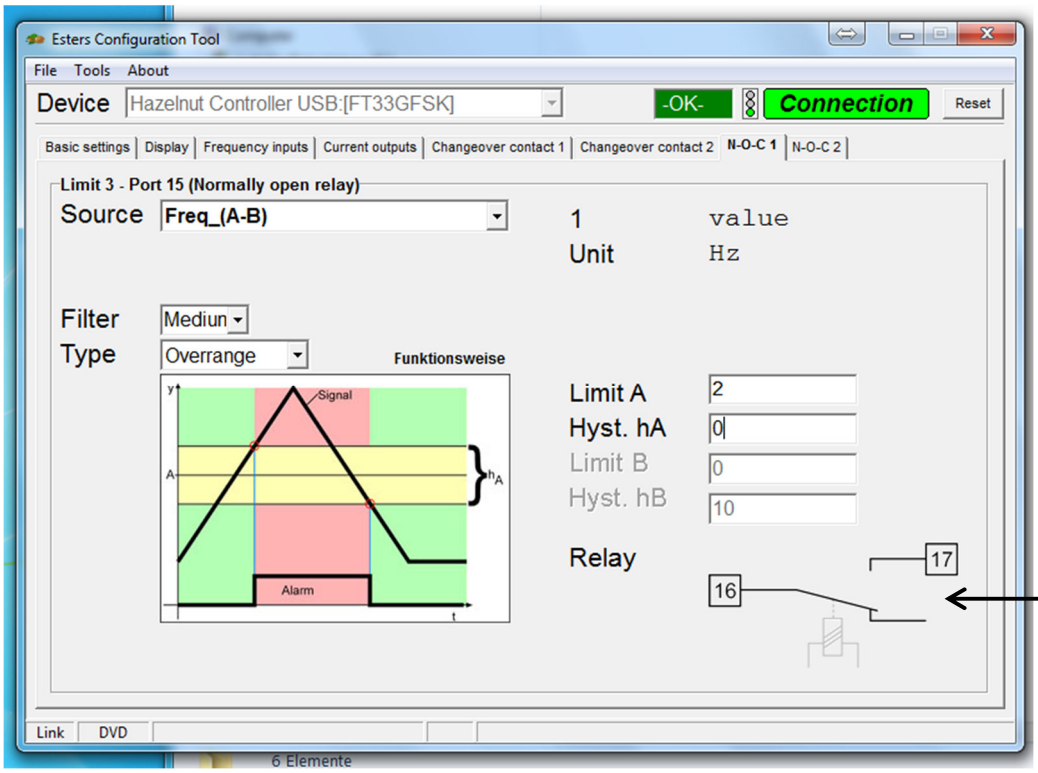
7.7.3 Relay outputs: limit value 3 (NO contact 1) and limit value 4 (NO contact 2)

The connection for the NO contact 1 is on port 15. The connection for the NO contact 2 is on port 16.

The limit values are freely configurable, the description for the settings of limit values 3 and 4 is made on the basis of the example of NO contact 1, and they also apply to changeover contact 2.



The following table describes the possible settings:

Designation	Description	editable
Limit 3 – Port 15 (Relay N-O-C 1) **Limit 4 – Port 16 + 14 (Relay N-O-C 2)**		**x**
Source	Definition of the signal source which applies to the limit value.	**x**
Filter	Additional trigger delay for the defined type of limit value	**x**
Type	Definition of the type of limit value	**x**
Limit A	Definition of the threshold switch of A (see Y-axis)	**x**
Hyst. hA	Definition of the hysteresis of hA	**x**
Limit B	Definition of the threshold switch of B (Y-axis) (only for Band and Notch)	**x**
Hyst. hB	Definition of the hysteresis of B (only for Band and Notch)	**x**

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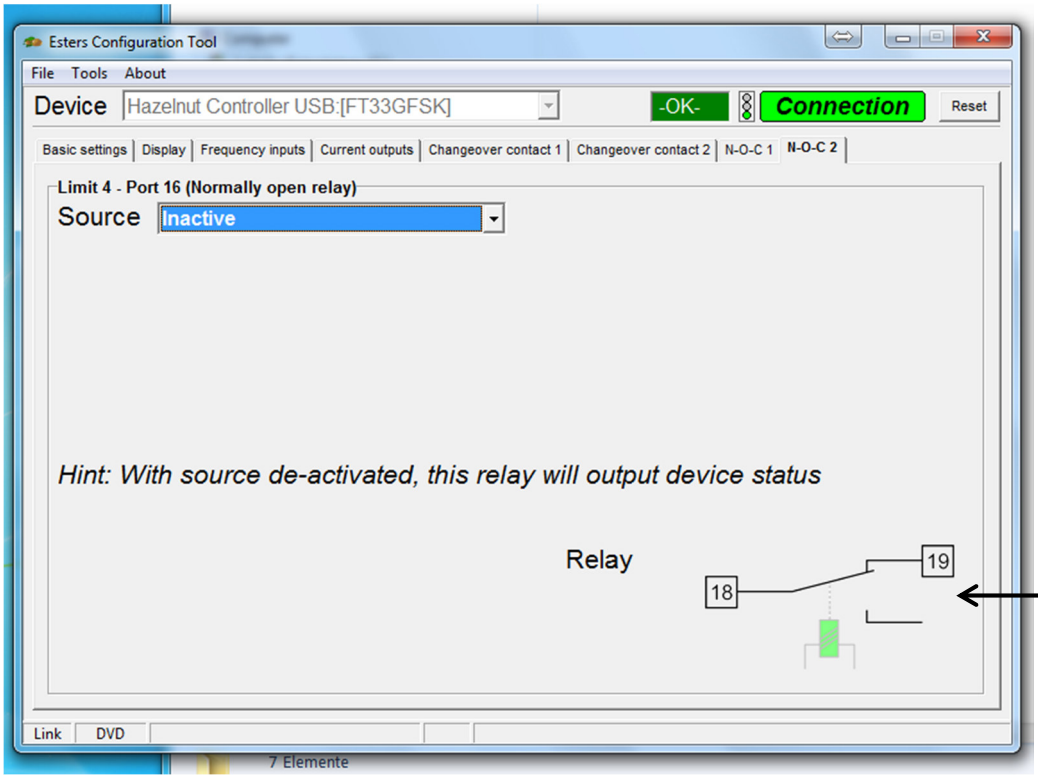
7.7.4 Relay outputs: limit value: 4 (NO contact 2) as device status

If the device status is required, the source for the limit value must be inactive.
Please note that only the N-P-C 2 supports this function.



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Phone: +49 (0) 6021 – 45 807 -0
Fax: +49 (0) 6021 – 45 807 -0
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Hafenrandstr. 14 · D-63741 Aschaffenburg
eMail: info@esters.de
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8 List of error codes

Startup error codes

[1000] - <Option setup>
[1001] - <Display init>
[1020] - <PLL/Clock fail>
[1021] - <ROM checksum error>
[1022] - <EEP full error>
[1023] - <EEP not detected>
[1024] - <Invalid parameter data>
[1025] - <LCD not detected>
[1026] - <No/invalid type code>
[1027] - <No/invalid option code>
[1028] - <Invalid system configuration>
[1100] - <Hardware error>
[1102] - <Load limits data>
[1103] - <Load flow integrator data>
[1104] - <Load digital integrator data>
[1105] - <Read relay config>
[1111] - <Read menu parameters>
[1121] - <XRAM r/w error>
[1122] - <XRAM less than 128KB>
[1123] - <XRAM less than 256KB>
[1124] - <XRAM less than 512KB>
[1125] - <XRAM less than 1MB>
[1130] - <VOLTAGE test running>
[1140] - <CSUB not detected>
[1141] - <CSUB wrong SW version>
[1150] - <SD Card not detected>
[1151] - <SD Card voltage error>
[1152] - <SD Card startup error>
[1153] - <SD Card OCR content error>
[1154] - <SD Card block size error>
[1155] - <SD Card CSD content error>
[1156] - <SD Card CID content error>
[1157] - <SD Card format error>
[1159] - <SD Card write reset event>
[1170] - <ENET not detected>
[1171] - <ENET configuration check>
[1310] - <IO card detection>
[1311] - <IO card detection>
[1320] - <I/O card slot #0>
[1321] - <I/O card slot #1>
[1322] - <I/O card slot #2>
[1323] - <I/O card slot #3>
[1324] - <I/O card slot #4>
[1325] - <I/O card slot #5>
[1326] - <I/O card slot #6>
[1327] - <I/O card slot #7>
[1330] - <I/O card slot #8>
[1331] - <I/O card slot #9>
[1332] - <I/O card slot #10>
[1333] - <I/O card slot #11>
[1334] - <I/O card slot #12>
[1335] - <I/O card slot #13>
[1336] - <I/O card slot #14>
[1337] - <I/O card slot #15>
[1340] - <Calibration slot #0>
[1341] - <Calibration slot #1>
[1342] - <Calibration slot #2>
[1343] - <Calibration slot #3>
[1344] - <Calibration slot #4>
[1345] - <Calibration slot #5>
[1346] - <Calibration slot #6>
[1347] - <Calibration slot #7>
[1350] - <Calibration slot #8>
[1351] - <Calibration slot #9>
[1352] - <Calibration slot #10>
[1353] - <Calibration slot #11>
[1354] - <Calibration slot #12>
[1355] - <Calibration slot #13>
[1356] - <Calibration slot #14>
[1357] - <Calibration slot #15>
[1360] - <Relay config read error>
[1361] - <Relay config 0 error>
[1362] - <Relay config 1 error>
[1363] - <Relay config 2 error>
[1364] - <Relay config 3 error>
[1370] - <Integrator A invalid>
[1371] - <Integrator B invalid>
[1401] - <CC-Modul (AnyBus) is not ready>
[1402] - <CC-Modul (AnyBus) is not responding>
[1403] - <CC-Modul (AnyBus) is not <Anybus>>
[1404] - <CC-Modul (moduleType) is not ready>
[1405] - <CC-Modul (moduleType) is not responding>
[1406] - <CC-Modul (moduleType) is not <Compact-Com>>
[1407] - <CC-Modul (netWorkType) is not ready>
[1408] - <CC-Modul (netWorkType) is not

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eMail: info@esters.de
Internet: http://www.esters.de

responding>
[1409] - <CC-Modul (netWorkType) is not correct network>
[1410] - <CC-Modul (nodeAdr) is not ready>
[1411] - <CC-Modul (nodeAdr) is not responding>
[1412] - <CC-Modul (nodeAdr) is not correct network>
[1421] - <CC-Modul (TxObj) is not ready>
[1422] - <CC-Modul (TxObj) is not responding>
[1423] - <CC-Modul (TxObj) is not correct network>
[1431] - <CC-Modul (RxObj) is not ready>
[1432] - <CC-Modul (RxObj) is not responding>
[1433] - <CC-Modul (RxObj) is not correct network>
[1441] - <CC-Modul (RTU Baud) is not ready>
[1442] - <CC-Modul (RTU Baud) is not responding>
[1443] - <CC-Modul (RTU Baud) is not correct network>
[1451] - <CC-Modul (TCP-IP) is not ready>
[1452] - <CC-Modul (TCP-IP) is not responding>
[1453] - <CC-Modul (TCP-IP) is not correct network>
[1460] - <CC-Modul (serial) is not ready>
[1461] - <CC-Modul (serial) is not responding>
[1462] - <CC-Modul (serial) is not correct network>
[1465] - <CC-Modul (serial) is not ready>
[1466] - <CC-Modul (serial) is not responding>
[1467] - <CC-Modul (serial) is not correct network>
[1470] - <CC-Modul (cfgComplete) is not ready>
[1471] - <CC-Modul (cfgComplete) is not responding>
[1472] - <CC-Modul (cfgComplete) is not correct network>
[1509] - <No serial number>
[1510] - <Reset halt>

Event recorder codes

[0xFFFF] - <No message>
[0xFFFE] - <Error list cleared>
[0xFFFD] - <Factory settings applied>
[0xFFFC] - <Event log cleared>
[0xFFFB] - <Device switched on>
[0xFFFA] - <Device is alive>
[0xFFF9] - <Timestamp syncronized>
[0xFFF8] - <Checkpoint charlie>
[0xFFF7] - <Battery changed>
[0xFFF6] - <Startup completed>
[0xFFF5] - <Firmware update applied>
[0xFFF4] - <SD card formatted>
[0xFFF3] - <Type code changed>
[0xFFF2] - <Option code changed>
[0xFFF1] - <Logger on/off toggled>
[0xFFF0] - <Ethernet link lost>
[0xFFEF] - <Lieferzustand applied>
[0xFFEE] - <System test failed>
[0xFFED] - <System test passed>
[0xFFEC] - <SD card S/N adapted>
[0xFFEB] - <Auto reboot triggered>
[0xFFEA] - <NTP synchronisation>
[0xFFE9] - <Application event>
[0xFFE8] - <Ethernet dropped>
[0xFFE7] - <Debug recorder event>
[0xFFE6] - <Daylight saving time switched>
[0xFFE5] - <Limitators event trigger>

Runtime error codes

[2000] - <System.TaskLock>
[2010] - <System.Corruption>
[2100] - <System.SelfTestSkipped>
[2200] - <System.PiggyComm>
[2210] - <System.BatteryVoltage>
[2220] - <System.RTCFail>
[2300] - <System.SDCard write error>
[2310] - <System.SDCard read error>
[2400] - <Relay.ControlError>
[2500] - <Gal.DataNotValid>
[2600] - <FieldBus.TimeOut>

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eMail: info@esters.de
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9 Troubleshooting

9.1 Replacing damaged parts

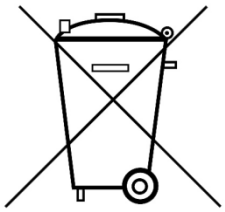
Damage to the device which affects the safety must only be repaired by authorized technical personnel.
After every repair and maintenance activity, suitable measures must take place. The device must then correspond to the specifications stated in the technical data.

Replace damaged parts immediately. When ordering spare parts, please use the contact information provided in section 2.

9.2 Returning goods

If repair is needed, please return the unit to the supplier. Only use the original packaging when returning the device.

9.3 Waste disposal



When disposing the device, it must be dismantled and the various materials must be separated. Please comply with your local rules and regulations.
When designing the device, one of the utmost considerations was its environmental compatibility. The measurement units are subject to the European Directive 2002196/EC, which stipulates that electric and electronic equipment must be dismantled and collected separately or may be returned to the supplier for disposal purposes.
Disposing such items as unsorted municipal waste is prohibited.

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Internet: http://www.esters.de