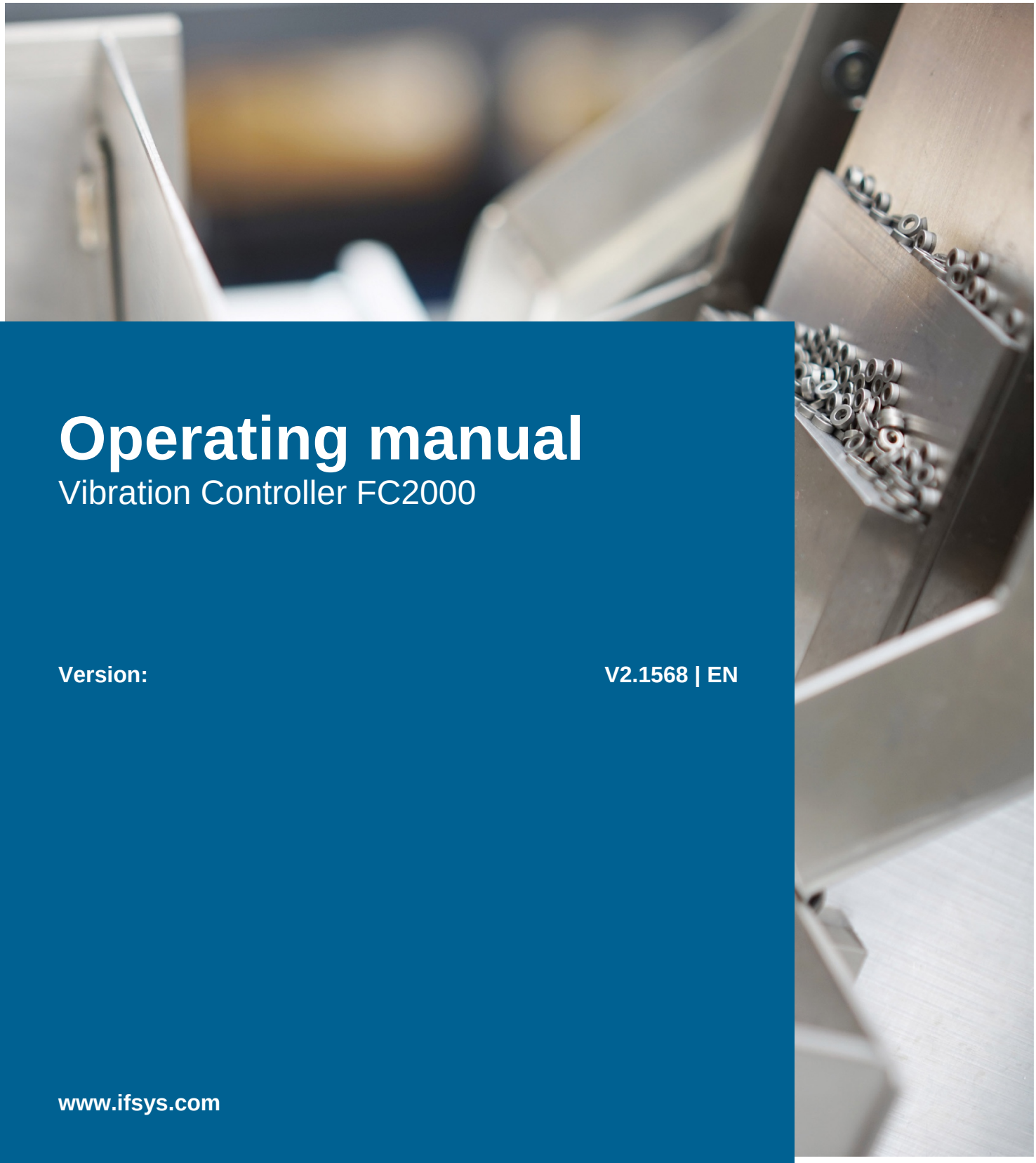
Integrated Feeding Systems



Operating manual

Vibration Controller FC2000

Version: **V2.1568 | EN**

www.ifsys.com

Table of contents

1 General information

1.1 Information on operating instructions / Legal note

About this operating manual
In this operating manual you will find all of the important information on installation, connection, setting, and operation of your FC2000 device.
It also provides information and important instructions for your safety.

Technical changes
Due to technical developments, we reserve the right to make changes to the operating instructions without notice.

Technical changes
We reserve the right to implement changes to the operating instructions due to technical developments without prior notice.

Translations
If translations of this operating manual (or parts thereof) are produced,
they are undertaken to the best of the knowledge and belief of those responsible.
The German operating instructions are the original version. Versions in other languages are translations of the original version.
We do not assume any liability for errors with the translation, even if the
translation was produced by us or on our behalf. The original German version is the controlling document.

Copyright
Passing on or supplementing the operating instructions are not permitted, unless expressly agreed by IFSYS.
Archiving and filing are permitted for the purposes of long term storage.

Trademarks
The common names, trade names, product descriptions, and
other designations reproduced here can be protected by law even where this is not
expressly indicated (e.g. as trademarks). This has no effect on copyright.

Contact information

Responsible for content:

IFSYS - Integrated Feeding Systems GmbH
Am weißen Kreuz 5
97633 Großbardorf
GERMANY

Tel: +49 9766 940098-0	Managing directors: Adelbert Demar, Rigobert Zehner
Fax: +49 9766 940098-199	District court: Amtsgericht Schweinfurt, HRB 5023
E-Mail: contact@ifsys.com	VAT Ident Nr. DE250207912

1.2 Symbols and signs

1.2.1 Warning signs

Sign	Meaning and consequences of disregarding	Measures for avoidance or reduction of danger
	**Warning:** Danger area Potential for injury or death.	• Select and deploy suitable personal or technical protective equipment • Only qualified specialists are permitted to carry out work ► see chapter *Qualification of personnel*
	**Warning: Electrical hazard** Failure to observe this sign can result in death, serious injury, or damage to property	• Select and deploy suitable personal or technical protective equipment • Only qualified specialists are permitted to carry out work ► see chapter *Qualification of personnel*

1.2.2 Additional symbols and signs

Sign	Meaning	Measures for avoidance or reduction of danger
	**Disconnect before maintenance or repair** Switch off the power and secure to prevent switching back on.	• Select and deploy suitable personal or technical protective equipment • Only qualified specialists are permitted to carry out work ► see chapter *Qualification of personnel*
	**Useful tips and information**	
	**Important information**	

2 Safety

2.1 Qualification of personnel

This descriptive document contains the information required for the proper use of the FC2000. It is intended to be read by technically qualified personnel.
Qualified personnel are persons who, on the basis of their education, experience and training, and their knowledge of the relevant standards, provisions, accident safety regulations and operating conditions, are authorized by those responsible for the safety of the equipment, to carry out any necessary tasks, and in doing so are able to identify and avoid any possible dangers.
(Definition of specialist personnel as per IEC 364)
The operating company is responsible for the training of the operating personnel.
Each employee responsible for the installation, commissioning, maintenance, operation of the FC2000 must have read this manual carefully beforehand and understood it. The operating company is recommended to impress the following points upon its personnel prior to the commissioning:

- Knowledge of the content of the operating instructions
- Knowledge of the safety and operating regulations cited within these
- Knowledge of the legal accident prevention regulations

We recommend having training confirmed in writing.

2.2 Safety instructions

The following safety instructions are for your protection, and the protection of third parties and the device itself. You are therefore requested to observe them without exception:

Hazard due to dangerous voltage. Failure to observe this sign can result in death, serious injury, or damage to property

- Disconnect the unit from the supply voltage before assembly or disassembly work as well as when changing fuses or making structural changes.
- Please refer to the relevant accident prevention and work safety regulations for your particular application.
- Before commissioning, check that the rated voltage of the device matches the rated voltage available locally.
- The electrical connections must be covered!
- Check the protective earth connections are in proper working order after installation!
- Before commissioning, check that the solenoid and its core on the connected vibration feeder are earthed..

Hazard due to improper use

- Always store the FC 2000 in a dry and clean storage place. The storage temperature should be between -10°C and +80°C.
- This should be observed in order to ensure compliance with proper use.
- Check the equipment immediately for any damaged packaging or transport damage. Damaged equipment must not be put into operation. Please inform the supplier immediately of any damage.
- During welding work on the machinery, all poles of the FC2000 must be disconnected from the mains and the connected vibration feeder.

3 The product – FC2000

For safety and authorization reasons (CE), any unauthorized conversion
and / or altering the device is not allowed.
The device complies with the valid low voltage and EMC directive.

3.1 Proper use

The device described here is a piece of electrical equipment for use in industrial machinery. It is designed for controlling vibration feeders. Any other use is not proper use and can result in injury to personnel and damage to property. (► you can find further information on this topic in the chapter *Safety instructions).*
For UL Applications: For use in industrial machinery NFPA 79 applications only.
(► you can find further information on this topic in the chapter *UL Approbation*).

3.2 Product specifications

- Frequency converter with output voltage stabilization
- Adjustable output vibration frequency (oscillation frequency)
- Main input AC voltage ranges: 95 - 130V // 195 – 250V , frequency: 50Hz or 60Hz
- Umin and Umax limit for the output voltage adjustable separately
- Adjustable current limit for maximum solenoid current
- Soft start and soft stop time adjustable separately
- Analogue setpoint settings
- Revert to factory settings
- Switchable by the control signal from a PLC, proximity switch or potential-free contact
- Temperature monitoring of the power output module
- All values display in original units ~V; ~A; ~T°C; ~Hz; ~mA-; Time ~s

3.3 Technical data

Mains input voltage, wide ranges	95V - 130V or 195V - 250V (self-adaptive)
Mains input frequency	50Hz or 60Hz
Output voltage ranges	1V – 115V or 1V – 230V (no higher than mains input voltage)
Variable output frequency	4 - 200 Hz (electrical frequency) corresponds to mechanical vibration frequency 8-400Hz shown on the display
Output current	0.1A – 6A
Protection type	**IP 54** for suspended installation (threaded connections pointing towards the ground) **UL Enclosure type 1**
Fuse	6.3A Fast Fuse (250V, 5x20mm)
Mechanical mains connection	4-pin socket in the axial sleeve housing (L+N+PE+N.C.)
Vibration feeder connection	4-pin connector in the axial sleeve housing (Load+Load+PE+N.C.)
Inputs (X4 pin 2&4)	+24V / max. 50mA PNP Switching level HI: 6 - 24V Switching level LO: 0 - 4V
Auxiliary output	+24V, 0.1A (Note: this 24V power output need extra wiring on inner PCB if needed)
Relay contacts output capability	Max +24V, 0.5A
Enclosure	Aluminum baseplate, extruded profile side and front cover
Dimensions	200mm(H) x 100mm(W) x 134mm (D) with suspended installation
Operation temperature	0 ~ +40°C
Storage temperature	-10 ~ +80°C
Operation altitude	1000m, 0.5% rated current reduction per each 100m above 1000m.

4 Installation

If the FC2000 is supplied separately, it must be mounted before commissioning, using the fastening holes located on back plate: two round holes and two elongated holes are accessible for securing the device. Refer to picture below:
The device should be mounted on a flat surface, free from vibration.

Fastening holes 4 x ø5mm

- When choosing the mounting position, please note that the cable length between FC2000 and vibration feeder must not exceed 10 meters

- The device must not come into direct contact with water
- When moving it from cold to warm environment, allow the device to adapt to the temperature for a few hours before putting it into operation, otherwise it could be damaged by condensation.
- Do not install FC2000 in the vicinity of devices which generate strong electromagnetic fields. This could interfere with the proper functioning of the FC2000.
- Also avoid environments subject to extreme heat or cold or damp.

5 Electrical connection

- All connections may only be made by qualified specialists.
  ► See chapter *Qualification of personnel*
  The device must be earthed

- Disconnect the device from the power supply before starting work

- Before connecting the device, make sure mains input voltage and frequency must be within the acceptable ranges stated in *Technical data chapter*.

5.1 Connections on the enclosure

5.1.1 Control input

To switch the vibration feeder connected to the FC2000 on and off, the control signals (X4 connector) must be used. Neither switching the mains input voltage nor the output circuit of the FC2000 may be used for this purpose. The control inputs enable the device to be switched remotely by another system (PLC, proximity switch, sensor, etc.).
Switch-on or switch-off with an external voltage of +24V DC is recommended. Also FC2000 can provide its own 24V DC supply voltage for this, but need extra inner wiring.

Do not use the mains voltage or the output circuit for operational switching on and off FC2000 output; this could damage the device.

5.1.2 Status output

In order to inform operating status of FC2000, there is a signal output (relay switchover contacts). The relay contacts are available at connector X5 of FC2000.

If the relay contacts are connected to a PLC, the PLC input should program or set a delay time of 2 seconds to filter noise signal and possible fluctuation on relay contacts.

5.1.3 Description of the connections

All connectors are located on the bottom of the FC2000.

X1 Main power supply connection	Pin 1 - L Pin 2 - N Pin 3 - Not Connected Pin 4 - PE	Cable section max. 2.5mm² x 3
X2 Drive output connection	Pin 1 - Load Pin 2 - Load Pin 3 - Not Connected Pin 4 - PE	Cable section max. 2.5mm² x 3, shielded version
X3 RS232 interface		Connector type: M12 5 pin A-coded, socket
X4 Control inputs for Automatic Mode (solenoid on / off) and Reset (acknowledge faults)	Pin 1 – Not Connected Pin 2 - Enable Pin 3 - GND-Digital Pin 4 - Reset	Digital GND is electrically isolated from 230V AC and analogue 5V GND Connector type: M12 5 pin A-coded, connector
X5 Relay output for: Not ready or fault status / ready or solenoid output	Pin 1 – Relay contact 11 Pin 2 – Relay contact 12 Pin 3 - Not Connected Pin 4 – Relay contact 14	Contact load max. 24V DC / 0.5A Connector type: M12 5 pin A-coded, connector
X6 threaded connection Analogue setpoint setting for vibration amplitude	See chapter *External Analogue control input wiring*	M12 dummy plug
X7 - X9	Reserve	M16 dummy plug

5.1.4 External Analogue control input wiring

If necessary, the convey speed (vibration amplitude) can be set via an analogue input:

1. Open the front cover to get access to the connection terminals on the control circuit board which mounted on the inside of front cover. See chapter *Opening the cover*

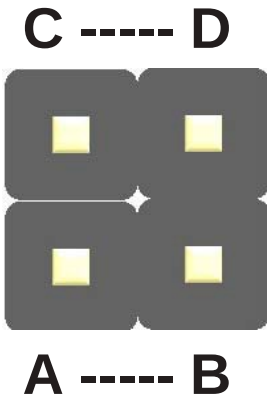
2. Open the dummy plug labeled as X6 and replace it with a suitable threaded connection. And connect wires according to picture below to the connection terminals on control circuit board. Right next to the connection terminal is a jumper, which must be used to select the current or voltage input. In addition, the corresponding settings must be configured in the menu Level 0 & 1.

Terminal 1 - GND analogue for current input / voltage input for external potentiometer

Terminal 5 - Voltage input 0-10 V= or external potentiometer or current input 4-20mA=

Terminal 6 - +5 V= analogue for external potentiometer

3. Right next to the connection terminals above is two jumpers' sets, which must be used to select the analogue current or voltage input.

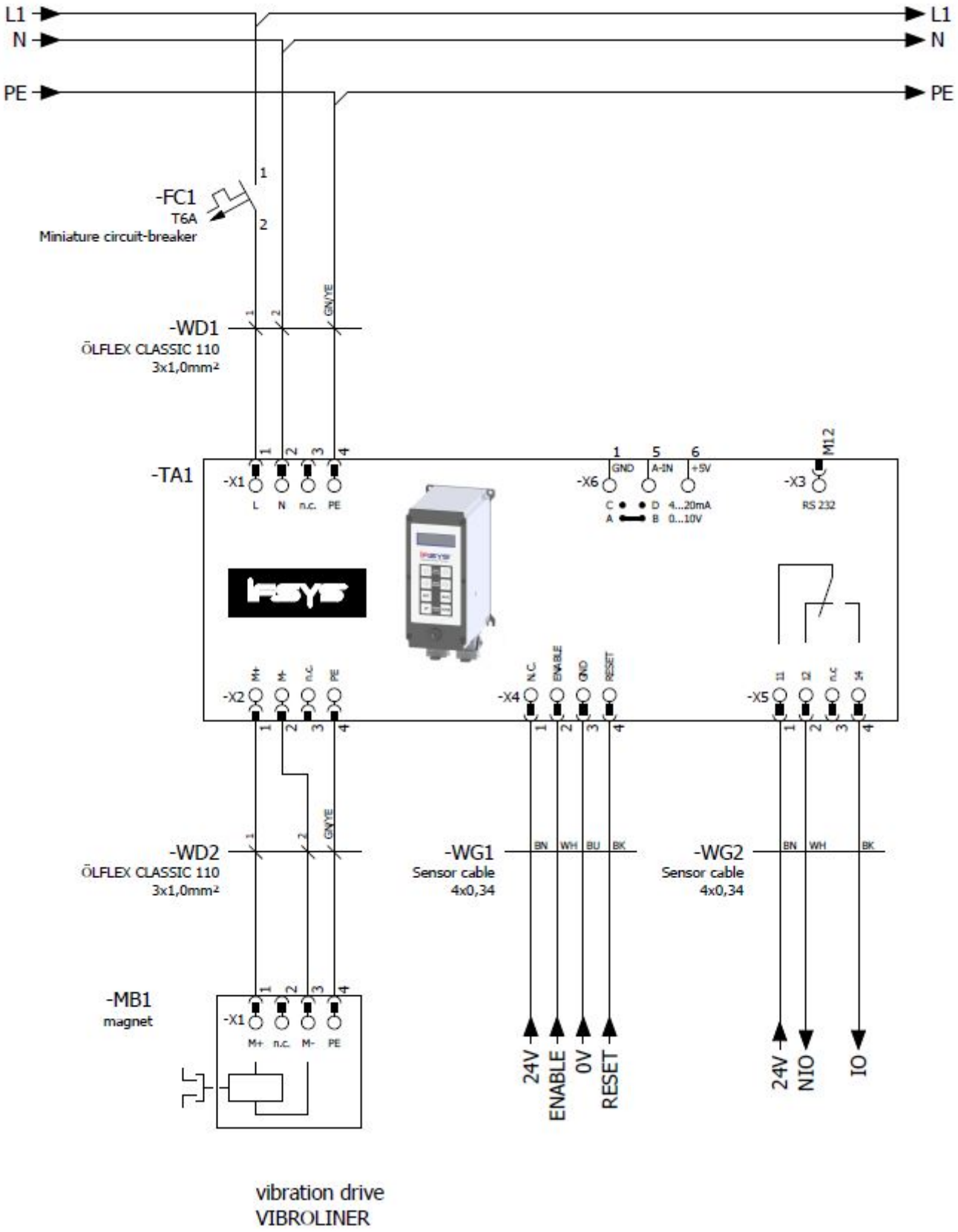


Jumper between **C-D** -> 4-20mA=

Jumper between **A-B** -> 0-10V= or potentiometer

4. Change the corresponding parameter "0AE" value accordingly. *See chapter Level 0 & 1 parameters*.

5.2 Example connection diagram



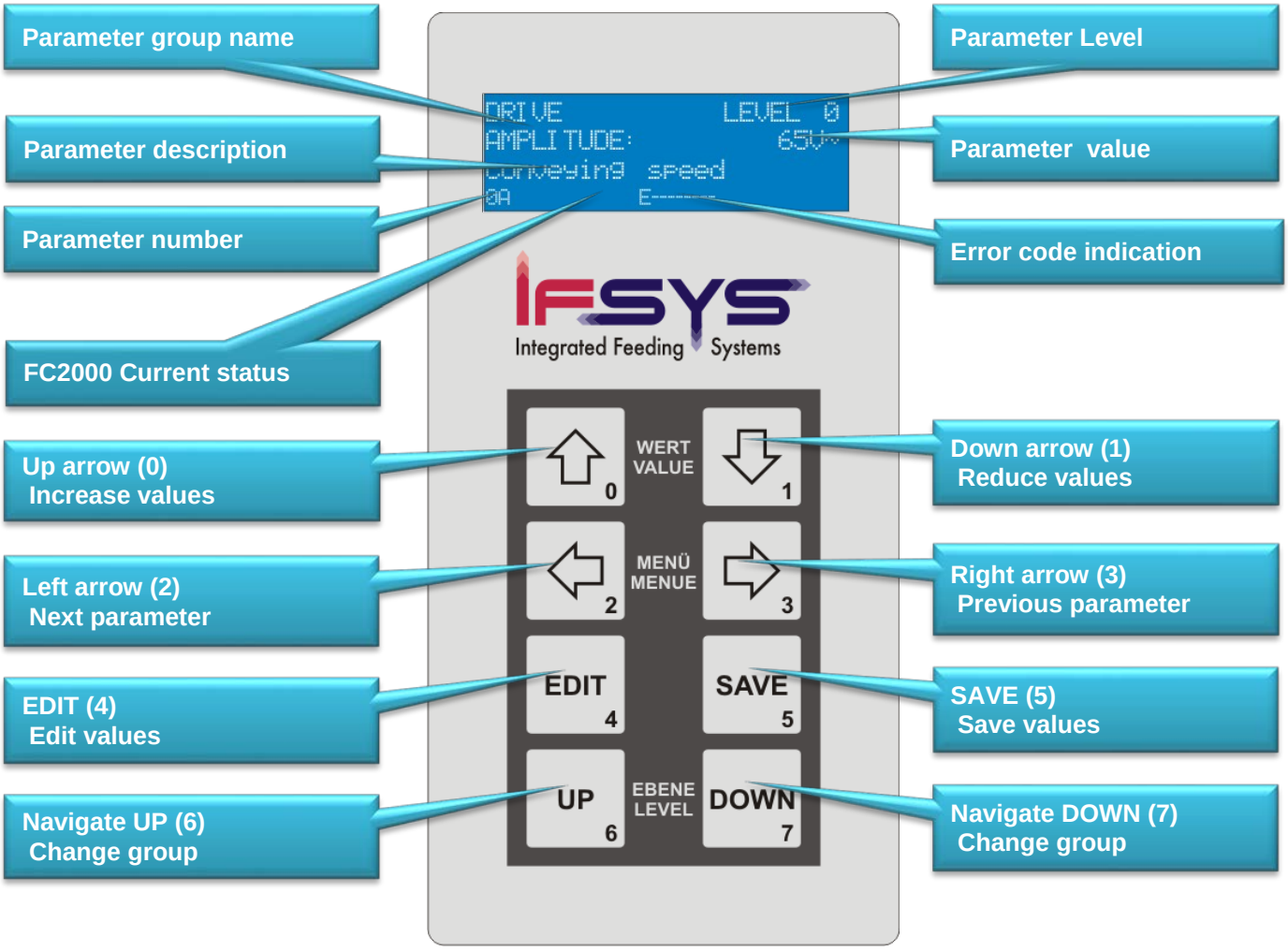
Cable types vary according to application (see chapter *UL approbation*)

6 Operation

The FC2000 only displays the correct function if it is installed and operated in the correct manner.
In case of malfunctions or unclear operating statuses, check the device and rectify the malfunction by qualified specialists (see chapter *Troubleshooting*).
To avoid the risk of injury, never allow untrained personnel or other vulnerable or at-risk persons to operate the device unsupervised.

6.1 Controls and display

The device status and settings are configured by using 8 keys, along with a plain text LCD display, which can be found on control panel on the cover.
All information and parameters can be checked and configured through this control panel.



6.2 Keypad Instruction

The parameters are configured using the keypad and the plain text LCD display.
The following chapter details the structure of the menus.

Under programming mode, briefly pressing the Up arrow key **0** (Increase values) or Down arrow key **1** (Reduce values) to increase/reduce or change the value of current displayed parameter. Pressing and holding the keys runs through the value rapidly.

Briefly pressing the Left arrow key **2** (Next parameter) or Right arrow key **3** (Previous parameter) switches from one parameter to the next/previous one. Pressing and holding the keys displays the parameters in a continuous sequence.

Briefly pressing the Navigate UP key **6** (change group) and Navigate DOWN key **7** (change group) switches from one parameter group level to the other. Pressing and holding the keys displays the group levels in a continuous sequence.

Briefly pressing the EDIT key **4** (Edit values) switches to Programming mode
Character '**P**' will appear next to the parameter number in the last line on the display
It is now possible to change parameter values with the Up arrow keys 0 and Down arrow keys 1.
Pressing EDIT key **4** (Edit values) again will exit programming mode without save changed values.

Changed values can only be saved by pressing the SAVE key **5** (Save values).
The indication 'save' appears briefly on the display as feedback that the values have been saved.

To check and change the menu items/parameters values of Level 1, the code for Password Level 1 must be entered.
(See chapter: *Entering the password level)*

60 seconds after the last key press (time out), programming mode will be exited automatically and any value changes without been saved by pressing **SAVE** key will also be discarded. The values that were saved last time are restored.
The exiting of programming mode due to a time out is indicated by the "P" on the display flashing several times.

6.2.1 Key Combinations

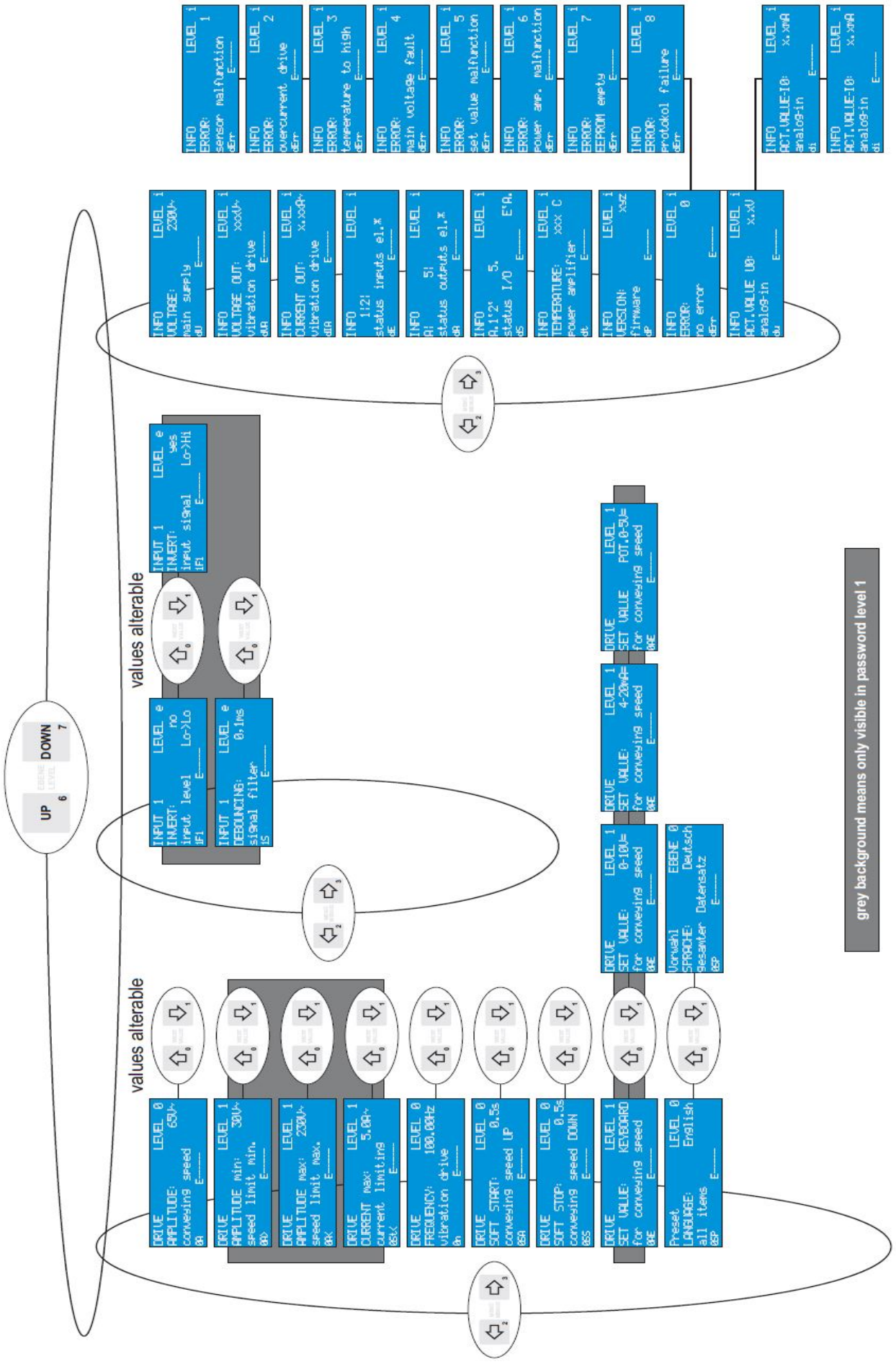
The FC2000 has some different key combination commands

Pressing keys 2 and 3 at same time navigates straight to the home screen with the vibration amplitude (conveying speed).

Pressing keys 4 and 5 at the same time displays the firmware version on the display.

Keep pressing keys 6 and 7 more than 2 seconds you can switch the drive output on and off for a while without external ENABLE input signal.
(See chapter *Drive manual mode*)

6.3 Menu structure



6.4 List of Level 0 & 1 Parameters

After the power is turned on, the home screen with the vibration amplitude (conveying speed) is shown on the display. The parameters of Level 1 are only visible by entering the code for Password Level 1!
(See chapter *Entering the password level*)

Parameter "0A" Amplitude / conveying speed
Value adjustable from 1 - 230V~, increment 1 V~
Value range also limited by main input voltage and amplitude limit parameter values.

Parameter "0A>" Amplitude limit min.
Value adjustable from 1 - 230V~, increment 1 V~
Value range also limited by mains input voltage and amplitude limit max. parameter value.

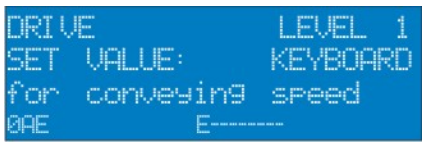
Parameter "0A<" Amplitude limit max.
Value adjustable from 1 - 230V~, increment 1V~
Value range also limited by main input voltage and amplitude limit min. parameter value.

Parameter "0St<" current limit on the drive
Value adjustable from 0.1 - 6.0A~, increment 0.1A~
Note: In order to protect solenoids, the value should be set to the maximum permissible current from all connected solenoids.

Parameter "0n" frequency on the drive
Value adjustable from 8.0 - 400Hz, increment 0.02Hz~
Note: This means mechanical vibration frequency,
i.e. a setting value of 100Hz corresponds to 50Hz output electrical frequency.

Parameter "0SA" soft start
Value adjustable from 0.1 - 5.0sec, increment 0.1sec
Output voltage ramp up time from 0V~ to set amplitude when start.

Parameter "0SS" soft stop
Value adjustable from 0.1 - 5.0sec, Increment 0.1sec
Output voltage ramp down time from set amplitude to 0V~ when stop.



Parameter "0AE" Amplitude / conveying speed value source selection
Option: KEYBOARD; 0-10V; 4-20mA; POT.0-5V;
KEYBOARD -- Amplitude value from parameter '0A' value
0-10V -- Amp. value from external analogue voltage input 0 - 10V
4-20mA -- Amp. value from external analogue current input 4-20mA
POT.0-5V -- Amp. value from external potentiometer(Max.10K)
See chapter *Analogue setpoint setting*

Parameter "0SP" Language selection
Option: Deutsch, English
Deutsch – menu language German
English – menu language English
See chapter *language menu guidance*

6.5 List of Level e Parameters

The parameters of Level e are only visible by entering the code for Password Level 1!
(See chapter *Entering the password level*)

Parameter "1F1" Input signal level
Yes(Lo->Hi) – Default setting, switch on FC2000 drive output through external Enable signal or manual mode
No(Lo->Lo) - For supplier manufacturer inner usage only

Parameter "1S" debouncing / input signal filter time
Value adjustable from 0.1 - 99.9ms, increment 0.1 ms
Input signal filter time in order to filter input signal noise or short time fluctuation.

6.6 List of the Level i information (read only)

Indication "dU", mains input voltage

The present mains input voltage is displayed

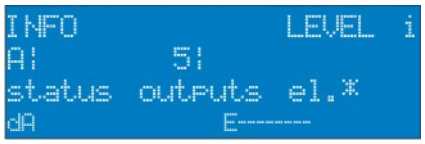
Indication "dIA" ,output voltage

The present output voltage on the drive (solenoid) is displayed

Indication "dIA" output current

The present output current on the drive(solenoids) is displayed

Indication "dE" status of control input signals
1: The present Enable input signal level (ENABLE)
2: The present Reset input signal level (RESET)



Indication "dA" drive status
A: The present drive (vibration feeder) output status
5: The present drive ready for operation output status

Indication "dS" status of the inputs/outputs
A: same output information above
1: same input information above
2: same input information above
5: same output information above

Indication "dt" temperature of the power amplifier

The present temperature at drive power output module is displayed.
Values up to 110°C are permitted

Indication "dP" firmware version

FC2000 firmware version is displayed.

Indication "dErr" fault indication

The present FC2000 error information is displayed.
See chapter *Fault indications*

Indication "du" actual value for Amplitude / conveying speed value analogue input value

Note: This information only appears if **Amplitude / conveying speed value source selection** is not 'KEYBOARD' option.

x.x V: Value of present analogue input voltage
xx mA: Value of present analogue input current

6.7 Language selection

With the parameter setting, language of the display can be switched between German and English.
Also you can download manuals in other languages on our website.

Scroll to level 0 parameter LANGUAGE with Left arrow key **2** or Right arrow key **3**.
Switch to programming mode by briefly pressing EDIT key **4.**
Switch language set with Up arrow key **0** or Down arrow key **1.**

Keep language selection by briefly pressing the SAVE key **5.**

6.8 Drive manual mode

In order to facilitate commissioning, FC2000 drive output can be switched on without ENABLE input signal by pressing a key combination. This function is time-limited. This mode is known as T10 mode.

When FC2000 drive output not switched on, pressing and holding key 6(UP) and key 7(DOWN) for 2 seconds to switch the FC2000 to manual mode and switched on output (**T10** mode)

'T10' appear in the last list on the display
T10 mode is activated and can be switched off via pressing the same key combination 6(UP) and key 7(DOWN) for 2 seconds.
The FC2000 only remains in this mode for 10 minutes, whereby the number after Txx displays the minutes remaining.
Briefly pressing any key restarts the timer function at 10 minutes.
Once the timer elapses, this mode ends automatically.

During **T10** mode, pressing and holding key **6**(UP) and key **7**(DOWN) again for 2 seconds ends **T10** mode. FC2000 drive output switches off, and '**off'** is also shown on the display.

6.9 Keylock

The parameter values of FC2000 can be protected against unintended modification by means of keylock activation. Except Programming mode, The keylock can be activated and deactivated from any display.
Note: The keylock **cannot** be activated while the FC2000 is in programming mode.

Activate keylock

To activate the keylock, press and hold the key **5 "SAVE"** for 10 seconds.

Keylock activated

A '**K**' (keylock) appears in the last line on the display.

Deactivate keylock

To deactivate the keylock, press and hold the key **5 "SAVE"** again for 10 seconds.
The "**K**" on the display disappears

- Keylock cannot be activated in programming mode.
- Parameters can be navigated even with the keylock activated. However, it is not possible to change any of the parameter values.

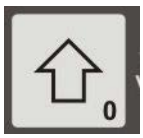
6.10 Password Level 1

Level 1 and Level e parameters only available for check or change values after entering the Password Level1:

When not under programming mode, press and hold key **4 (Edit)** for about 2 seconds.

The following appears on the display: **INPUT CODE:**

The **"P"** also appears in the last line of the display, indicate entering programming mode also.



The access code is: **000**
Enter the code by briefly pressing Up arrow **key 0 three times**. On the display, a dash appears next to "INPUT CODE" for each key pressed. Confirm the code input by pressing key **5 (Save)**

Then Level1 and Level e parameters are available and appear in the parameter list at appropriate places, and their values can be changed.

Exit password level

To exit the password level, Briefly press key **4 (Edit)** again.

The **"P"** disappears in the last line on the display, programming mode exit, Level 1 and Level e parameters are hidden again.

If no button is pressed for 60 seconds, the password level is exited automatically..

7 Troubleshooting / Fault rectification

- Danger due to electrical voltage
  ► see chapter *Qualification of personnel*

- Danger due to tampering.
- Do not tamper with the device. Otherwise this can lead to malfunctions and defects with the device.

- In an unfavorable electromagnetic environment, faults are possible.

7.1 Fault indications

Fault indication	Description of problem	Possible cause(s) / Remedy
 **Error message 1 "Sensor malfunction"**	This fault message does not exist for this model of the device.	
 **Error message 2 "Drive overcurrent"**	The output current exceeds limitation.	➢ Check Amplitude / conveying speed parameter value, maybe too high ➢ Check Frequency parameter value, maybe too low ➢ Check the air gap at the solenoid of the vibration feeder, the gap may be too large Reset device output by sending RESET input signal or reconnect main power input.
 **Error message 3 "Temperature too high"**	The temperature of the output module exceeds the limit value.	➢ Switch off the device. Allow the output module cool down, and check Amplitude parameter value and Frequency parameter value settings Reset drive output by sending RESET input signal or reconnect main power input.
 **Error message 4 "Main voltage fault"**	The mains voltage is outside of the standard voltage ranges	➢ Check if main voltage in range of 95-130V or 195-250V Device can self-reset when main voltage back to normal range
 **Error message 5 "Set value malfunction"**	Analogue control input value exceeds setting range.	➢ Check analogue input signal value, whether in the range of 0~10V or 4~20mA Device can self-reset when analogue input signal value back in normal range
 **Error message 6 "Power amplitude malfunction"**	Output module malfunction	➢ Reconnect drive main power input, if error still exist, then drive defective, must be replaced. Contact the *Service* department.

Error message 7
"EEPROM empty"

Data loss occurred in the EEPROM.

- Device defective, must be replaced. Contact the *Service* department.

Error message 8
“Protocal failure”

Drive inner communication failure

- Send RESET signal to reset drive. If error still existst, then reconnect drive main power input. If device still does not work, then it´s defective, it must be replaced.
  Contact the Service department.

7.2 Faults with no indication

Problem / Fault	Possible cause(s)	Remedy
FC2000 no power/ no display, or drive output not switched on	• Power failure or defective fuse	➢ Check the fuses. (F6.3A)
	• The mains voltage is not in standard voltage range.	➢ Have the mains voltage at the input of the FC2000 checked by qualified specialists.
	• The device is defective.	➢ Have the device checked by qualified specialists.
	• No ENABLE control input or control input signal level incorrect.	➢ Check control input signal.
Vibrating feeder not working	• Incorrect vibration frequency set	➢ Adjust frequency parameter value, or have qualified specialists to compare the vibration frequency with the data of the vibrating solenoid.
	• Incorrect mains frequency	➢ Check main input power frequency, or have qualified specialists to compare the mains frequency with the data of the vibrating solenoid.
	• Amplitude too low or Amplitude max too low	➢ Check parameter settings.
Vibrating feeder vibrating too strongly, or solenoid knocking	• Amplitude too high or Amplitude max too high	➢ Check parameter settings.
	• Incorrect vibration frequency set	➢ Check parameter setting, or have qualified specialists to compare the vibration frequency with the data of the vibrating solenoid.
Magnet gets hot	• Magnet being operated above the permissible voltage	➢ Have the voltage checked by qualified specialists.
	• Magnet being operated above the permissible frequency	➢ Have the frequency checked by qualified specialists.
Control input not switch on drive output	• Control input voltage is in the incorrect range	➢ Have the control input voltage checked by qualified specialists.
	• Control input deactivated	➢ Check parameter settings

7.3 Opening the cover of the enclosure

- Danger due to electrical voltage
  ► see chapter *Qualification of personnel*

- Risk of trapping when bolting the cover into place

- Disconnect the device from the power supply before starting work

De-energize the device and secure it against being switched back on, or disconnect main voltage input plug.

Remove the six visible screws on the cover of the enclosure with standard Phillips screwdriver.

When closing the cover of the enclosure, make sure that no cables are caught in it.

Position the cover back on the enclosure and secure it with the removed screws.

8 Maintenance and cleaning

- The control device is maintenance-free.
- The safety test according to DIN VDE 0701-0702 must be performed on an annual basis.
- Before cleaning the device enclosure using liquids, switch off the mains voltage!

Danger due to electrical voltage
► see chapter *Qualification of personnel*

Disconnect the device from the power supply before starting work

9 Disposal

The device may not be disposed of with normal household waste.

Users are obligated to hand in used devices at a disposal point for used electrical and electronic equipment. The collection (sorted by type) and proper disposal of your used devices contributes to preserving our natural resources and ensures that they will be recycled, which protects human health and conserves the environment. You can obtain information on where you can find disposal points for your used devices from your local authority, and from local waste disposal firms.

10 Declaration of Conformity

Declaration of Conformity according to EC Directive 2014/30/EC (Electromagnetic Compatibility), dated 26 February 2014.

We hereby declare that the device identified below, in the version placed on the market by us, complies in terms of its design and construction with the basic health and safety requirements of EC Directive 2014/130/EU.
If the device is modified in a manner not agreed up with us, then this Declaration shall be void.

Manufacturer:	IFSYS Integrated Feeding Systems GmbH Am weissen Kreuz 5 97633 Grossbardorf Germany
Person responsible for compilation of the relevant technical documentation:	Michael Eppler Documentation Management IFSYS Integrated Feeding Systems GmbH Am weissen Kreuz 5 97633 Grossbardorf Germany

Product specifications

Designation: Vibration Controller
Model: FC2000
Version V2.1568
Year of manufacture: 2018

The FC2000 has been developed and manufactured in accordance with the following regulations, harmonized standards and technical specifications:

- **2014/30/EC**
  EC EMC Directive
- **2014/35/EC**
  EC Low-Voltage Directive
- **EN 61010-1**
  Safety requirements for electrical equipment for measurement, control, regulation and laboratory use - Part1: General requirements
- **EN 61326-1**
  Electrical equipment for measurement, control, regulation and laboratory use - EMC requirements - Part1: General requirements

If the device is modified in a manner not agreed up with the manufacturer, then this Declaration shall be void.

Place, date: Großbardorf, 2018-04-03

Manufacturer signature:

p.p Michael Eppler
Documentation Management

10.1 UL approbation

The device is UL-approved and is listed under the following UL file number.

IND.CONT.EQ
.
E479925

For use in industrial machinery NFPA 79 applications only.
For the power connections only cables may be used that correspond with the requirements of NFPA 79 (2012 / 12.2 – 12.6).

Necessary accessories for reference:

Male insert pin (for X2 connection)	1585210, HC-A03-I-UT-M, PhoenixContact
Female insert pin (for X1 connection)	1585223, HC-A03-I-UT-F, PhoenixContact
Sleeve housing	19620031440, HAN 3A-EMV, Harting

11 Service adresses

Please have the following information to hand in order to expedite the handling of Service requests::

- Serial number of the device
- IFSYS machine number and designation of the feed system

(you can find this information on the type plate or on the operating manual of the associated feed system)

Service adresses:

Germany / Europe

IFSYS Integrated Feeding Systems GmbH
Am Weißen Kreuz 5
97633 Großbardorf

Tel.: +49 (0) 9766 / 94 00 98-0
Fax: +49 (0) 9766 / 94 00 98-199

contact@ifsys.com
www.ifsys.com

North America

IFSYS North America, Inc.
2240 Hwy 292
Inman, SC 29349

Tel.: +1 .864.472.2222
Fax: +1 .864.472.2232

info@ifsys.us
www.ifsys.us

China

Jopp Technology (Suzhou) Co., Ltd.
3# plant, No. 96 Weixi Road
Suzhou Industrial Park
215122 Suzhou, Jiangsu Province

Tel.: +86 512/6936-2799
Fax: +86 512/6936-2797

china@jopp.com
www.jopp.com