



REOVIB

For Vibratory Feeder Systems

SWM 4000

Handheld measuring instrument for vibratory feeder

Contents

Technical Information for the User	3
1.0 General	4
2.0 Technical Data	4
3.0 Control Elements / Display Messages	5
4.0 Menu Structure	6
5.0 Mounting the accelerometer	7
6.0 Calibrating the sensor input	7
7.0 Saving the measured values	7
8.0 Read measurements	7
9.0 Saving your own parameter	8
10.0 Function „only measure“ or enable and disable Parameter/Menues	8
11.0 Factory setting	8
12.0 Readout the saved data sets into a PC	8
13.0 Delivery contents	9
14.0 Spare Parts / Single components	9
15.0 Dimensions	10

Technical Information for the User

This description contains the necessary information for the correct application of the product described below. It is intended for use by technically qualified personnel.

Qualified personnel are persons who, because of their training, experience and position as well as their knowledge of appropriate standards, regulations, health and safety requirements and working conditions, are authorised to be responsible for the safety of the equipment, at all times, whilst carrying out their normal duties and are therefore aware of, and can report, possible hazards (Definition of specialist according to IEC 364).

Safety Instructions

The following instructions are provided for the personal safety of operators and also for the protection of the described product and connected equipment.



Warning!

Hazardous Voltage

Failure to observe can kill, cause serious injury or damage

- Isolate from mains before installation or dismantling work, as well as for fuse changes or post installation modifications.
- Observe the prescribed accident prevention and safety rules for the specific application.
- Before putting into operation check if the rated voltage for the unit conforms with the local supply voltage.
- Emergency stop devices must be provided for all applications. Operation of the emergency stop must inhibit any further uncontrolled operation.
- **Electrical connections must be covered**
- **Earth bonding must be tested prior to operation**

Prescribed Use

The units described herein are electrically powered for use in industrial applications and are not suitable for domestic use

These units comply with Directive 2004/108/EC

EMC Directive



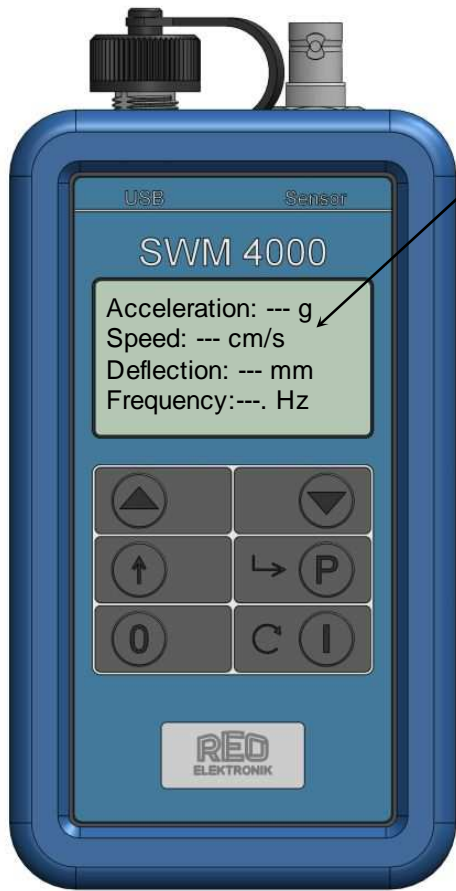
1.0 General

Reliable and accurate instrument for the installation, testing and servicing of vibratory conveyor equipment. This unit supersedes REO's popular SMW3000 unit and incorporates many new features. When combined with an appropriate accelerometer, the unit displays, acceleration, speed, vibration amplitude and frequency. It can store up to 40 instantaneous values and transfer these as an .XLS file to a PC via USB connection. The language may be set to allow worldwide use and the screen is backlit to allow easy viewing in all ambient conditions. The unit is housed within a robust rubber casing and the integrated lithium-ion battery, can be charged easily via a USB interface to allow versatile operation. Optimization of the design, display and internal battery, means that the unit is faster, more reliable and yet is smaller and more convenient to use. The REOVIB SMW4000 instrument is supplied with a comprehensive list of accessories, consisting of USB cable and charger (traveler), protective cover, 100mV/g accelerometer, sensor mounting bracket and sturdy carry case.

2.0 Technical Data

Unit type	REOVIB SWM 4000
Supply voltage	USB Travel Charger / Power Supply, 115/230V , 50/60 Hz , +/-10% min. 0,9A / 5V
Effective value input	Sensor 10 / 100 / 500 mV/g +/-20% difference adjustment (8 – 600mV/g)
Sensor supply	Constant current 14mA
Frequency	6...600Hz
Amplitude	0...30mm
Measuring range	0,2...150g
Measuring error	1,5%
Enclosure protection	IP 40
Dimensions- (HxWxD)	81 x 159,5 x 35 mm
Operating temperature	0...45 °C
Storage temperature	-20...+45 °C
Rel. Humidity	93 % without dew or condensation
Environment protection	Class 1 (IEC 664)
Power rating	0,8 VA

3.0 Control Elements / Display Messages



Display
Acceleration in g
Speed in cm/sec
Deflection in mm
Frequency in Hz

Indicates that there is no measurement signal and the sensor is connected

Acceleration: --- g
Speed: --- cm/s
Deflection: --- mm
Frequency: --- Hz

Indicates that the Sensor is not connected or Sensor fault

▲ Acceleration: --- g
Speed: --- cm/s
Deflection: --- mm
Frequency: --- Hz

blinking

① ON

② OFF

① ▲ Select menu

② ▼

③ (P) Open / Close Menu

④ ▲

⑤ ▼ Select parameters

⑥ (P)

⑦ Enable Parameterisation

⑧ ▲

⑨ ▼ change Parameters / set value

⑩ (P)

⑪ Finish Parameterisation

⑫ ⬆

⑬ backwards each level or return to Operation mode

example: parameterisation












black background: Selected menu / parameters

Operation mode

Acceleration: 5.00 g
Speed: 7.5 cm/s
Deflection: 0.23 mm
Frequency: 105 Hz



4.0 Menu Structure

No.	Symbol	Menu option	Meaning	Adjustment
1		Storage		
1.1		Record	Save record	0-39
2		Records		
2.1		Record	Load record	0-39
2.2		Acceleration	Acceleration	
2.3		Speed	Speed	
2.4		Deflection	Deflection	
2.5		Frequency	Frequency	
2.6		Clear Record	Delete selected record	Execute
3		Info		
3.1		Soft	Software version	View only
3.2		Datum	(Only for service purposes)	View only
3.3		No	(Only for service purposes)	View only
4		Service		
4.1		Clear All Records	Clear All Records	Execute
4.2		Cal	Acceleration sensor calibration	8-600 mV/g
4.3		Language	Select the menu language	wählen
4.4		Multi Line	Changing the menu structure (Multi Line / Single Line)	1 / 0
4.5		Back Light	Backlight off / on	1 / 0
4.6		Factory Settings	Restoring factory settings	Execute
4.7		Code	Menus enabling or disabling (see section 9.0 and 10.0)	
4.8		User Params	Load customers parameter settings	Execute
4.9		Auto Off	<u>Auto Off: 1 = Energy saving mode On</u> (the backlight turns off after 30 seconds and SWM4000 turns after 2 minutes off) <u>Auto Off: 0 = Energy saving mode off</u> (the backlight (if Backlight: 1) and SWM4000 remain permanently switched on)	1 / 0
4.10		Hold	current measurement screen remains	1 / 0
4.11		Effective Value	Acceleration is displayed in RMS	1 / 0

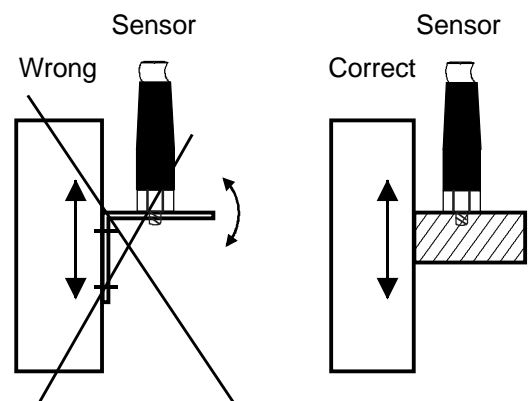
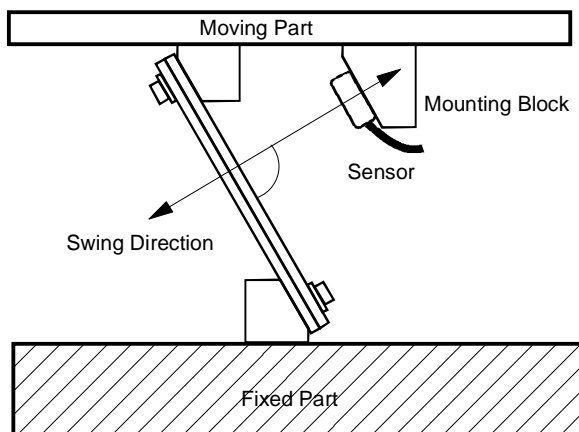
5.0 Mounting the accelerometer



Important!

Sensor mounting:

The accelerometer should generate signals for the movement and acceleration of the feeder, which are fed back to the regulator circuit of the control unit. Therefore it is very important that no other extraneous vibration signals are picked up by the sensor



6.0 Calibrating the sensor input



Important!

The sensor constants deviating from the indicated sensor voltage (mV/g) must be set once on the measuring unit!

A calibration certificate is provided with each sensor supplied. This certificate shows the exact value of the sensor output voltage, for example 95 mV/g. This value must be entered in the **Menu: Service with Parameter "Cal"**.

The sensor input is factory-set to 100 mV/g. It is possible to set deviations up to +/- 20 %.

7.0 Saving the measured values

All four values (acceleration, speed, deflection / amplitude, frequency) are saved. Press the arrow key to select the no. of the set to start the storage with.

In Menu: Storage, Parameter: Record → 0-39

8.0 Read measurements

This menu serves to control the data sets stored. The individual data sets may be viewed and cleared (if necessary) by pressing the arrow keys.

In Menu: Records, Parameter: Record → 0-39

9.0 Saving your own parameter

You can save your own settings of the unit.

Save:

In Menu: Service, Parameter: Code: 143 → Set User Params

Load:

In Menu: Service, Parameter: User Params

10.0 Function „only measure“ or enable and disable Parameter/Menus

With this parameter you can protect the saved data sets and unit settings against unauthorised modifying.

In Menu: Service, Parameter: Code: 117 → Lock Menues: 1

Enabling parameter / Menus:

In Menu: Service, Parameter: Code: 117 → Lock Menues: 0

11.0 Factory setting

With this parameter you can restore the factory settings.

In Menu: Service, Parameter: Factory Settings

12.0 Readout the saved data sets into a PC

At this unit it is possible to load the saved data sets via the USB interface into a PC.
For the coupling you need Microsoft EXCEL

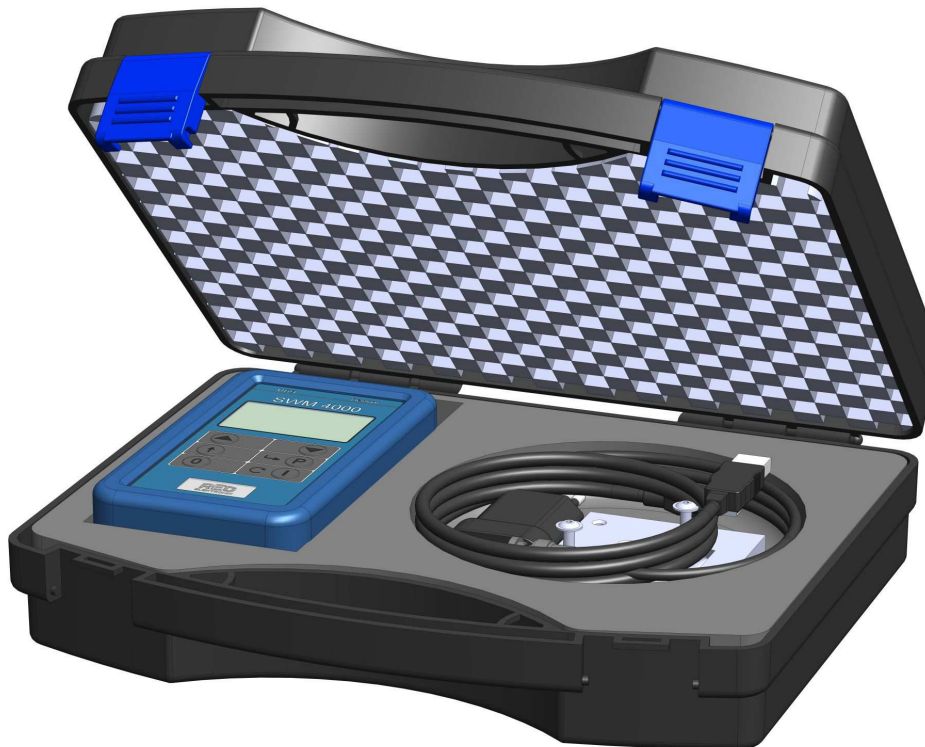
Approaching:

1. Connect measurement device with the data cable to the PC.
2. Switch on the SWM 4000
3. Load data file „SWM4000_usb32.xls“
4. Use button „ receive “. After the sweep the data sets must be displayed.

13.0 Delivery contents

The measuring instrument "SWM 4000 Set" consists of:

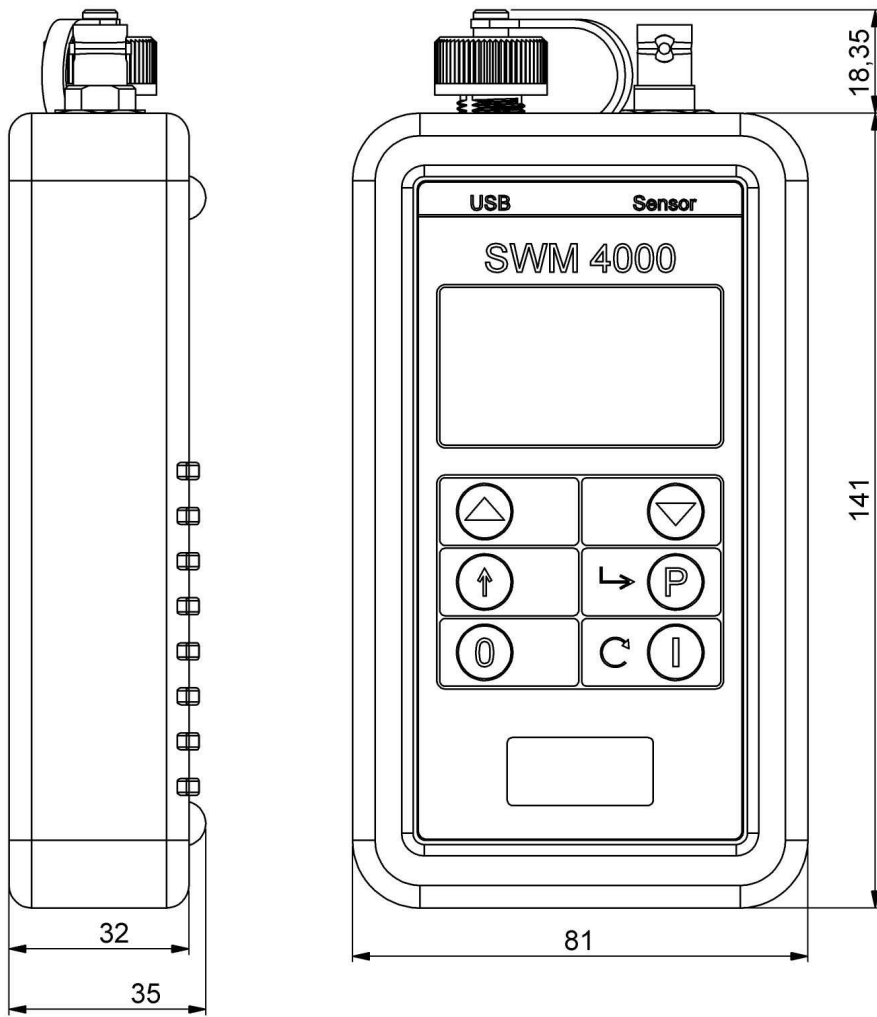
Designation	Order Number
Measuring instrument SWM 4000	677401
USB-charger/power Supply (traveler) incl. USB data/charging cable	
Silicone protective cover for SWM 4000	
Sturdy carry case	
Sensor mounting bracket	
Accelerometer (100mv/g) incl. mounting magnet	



14.0 Spare Parts / Single components

Designation	Order Number
Measuring instrument SWM 4000 with USB-charger/power Supply (traveler) incl. USB data/charging cable	677411
USB-charger/power Supply (traveler) incl. USB data/charging cable	090611
Silicone protective cover for SWM 4000	090612
Sturdy carry case	090613
Sensor mounting bracket	090614
Accelerometer (100mv/g) incl. mounting magnet	084430

15.0 Dimensions



REO