



User's Guide Appendix



Vibration Analyser Adash 4102/A

(Appendix of the User's guide of Adash 4101 instrument)

Application:

- ✎ Diagnostics of machine defects – unbalance, misalignment...
- ✎ Diagnostics of ventilators, pumps, gearboxes, engines, turbines, machine-tools...
- ✎ Diagnostics of low-speed machines – paper machines, mill trains, conveyers...
- ✎ Operating machine balancing
- ✎ Outlet inspection of products
- ✎ Option Eex ib IIB T3 certificate

Characteristics:

- ✎ Possibility to connect sensor of acceleration and light or laser tachprobe
- ✎ ICP feeding of a sensor
- ✎ TTL trigger for a synchronization of measurements, machine speed measurement
- ✎ Averaging of static and dynamic data
- ✎ Measurement of RMS, PEAK, P-P values and Kurtosis factor
 - VEL velocity mm/s in the band 10 – 1,000 Hz
 - DISP displacement μm in the band 10 – 1,000 Hz
 - ACC acceleration m/s^2 in the band 0.8 – 1,000 Hz
- ✎ FFT analysis from 101 to 801 lines, order analysis of 10 harmonics
- ✎ Time signal analysis
- ✎ Operating single or two plane balancing
- ✎ Data collector – route mode of measurements, 512 KB of memory
- ✎ Analyser – user set up of parameters between measurements
- ✎ Backlighted graphics LCD display
- ✎ Supplied by 4 x AA batteries or alkaline cells
- ✎ RS232 user software communication interface
- ✎ User software A4000Download, DDS 2000, MDS5.00



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Before Switching On of the Analyser

The violation of any mentioned below recommendations will cause failure of the instrument.

Unqualified operating with a power higher than 24 V can run a risk of accident.

1. Never connect a different sensor than an integral electronic type into the ICP input. If you are not sure, contact your dealer.
2. Never connect the analyser to a line voltage 230 V (110 V).
3. Use only batteries with a nominal voltage of max. 1.5 V for feeding.

Warning!
Be careful of battery orientation, the power source would be damaged!



Fig. Correct polarity of the supply cells

Preface

This guide does not contain description of vibration diagnostics methods and balancing theory.

The chapters from the Adash 4101 User's guide not inserted here hold good without changes. In chapters inserted here you can find only the differences between Adash 4101 and Adash 4102/A instruments

Analyser Control, Important Keys

A4102/A instrument signal paths are different from A4101 instruments ones – see chapter ***Types of Signal Processing*** below.

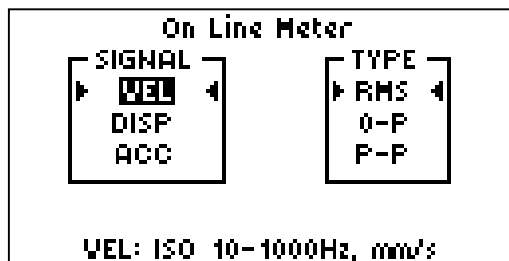


Fig. A4102/A instrument signal paths

In addition to Adash 4101 instrument measurements of TRUE-RMS and TRUE-PEAK values, Adash 4102/A instrument is equipped with TRUE PEAK-PEAK measurement.

Basic Points Description

Indication of ICP Power Supply On of the Vibration Sensor

In contradistinction to Adash 4101 instrument, it is not possible to switch off ICP sensor power supply for Adash 4102/A instrument.

Types of Signal Processing

The input signal may be processed and modified in various methods; in relation to the measurement we always speak about selecting a **signal path** – see chapter **Connection of the Vibration Sensor**. The same path label is used in all the device menus where the signal path is selected. The following table describes the characteristics of three signal paths used in the Adash 4102/A instrument.

VEL	ISO standard, velocity signal in 10 – 1,000 Hz band	[mm/s]
DISP	displacement signal in 10 – 1,000 Hz band	[μm]
ACC	acceleration signal in 0.8 – 1,000 Hz band	[m/s^2]

Besides these standard signal paths, the analyser is also equipped with a special path:

200 Hz	velocity signal in 0.8 – 200 Hz band for the measurement of order analysis and for balancing .	[mm/s]
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Functions Description

Connection of the Vibration Sensor, ICP Supply

In contradistinction to Adash 4101 instrument, it is not possible to switch off ICP sensor power supply for Adash 4102/A instrument. The connected sensor is always ICP supplied.

The acceleration sensor enables measurement via three various signal paths – see chapter **Types of Signal Processing**:

VEL	mm/s	via an integrator
DISP	μm	via a double integrator
ACC	m/s^2	directly

On Line Measurement (START)

On Line Meter

You can choose from three signal paths (see chapter *Types of Signal Processing*) and for each signal path the *TRUE RMS*, *TRUE PEAK (0-P)* or *TRUE PEAK-PEAK (P-P)* values can be measured.

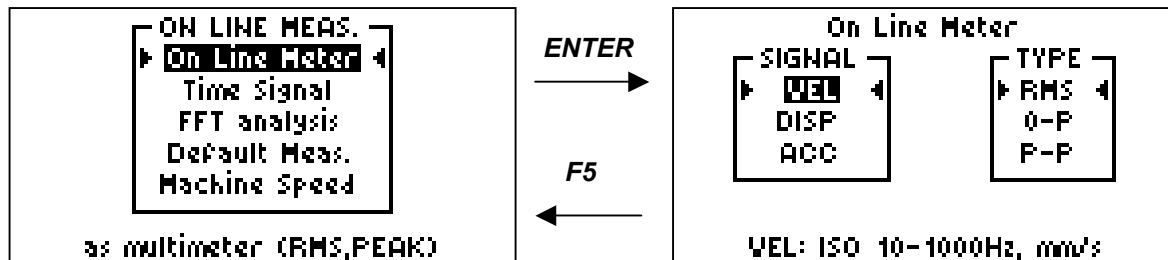


Fig. Selection of the On Line Meter

Fig. Selection of the signal path and measured value

Time Signal

(For instrument with optional Time Signal software only.)

Note: Instruments supplied in the basic version do not have to have the measurement implemented – see chapter *Capabilities of 4101 Analysers*.

After activating the *Time Signal* item in the *ON LINE MEAS.* selection window and after selecting a signal path (see chapter *Types of Signal Processing*), the time signal will be recording.

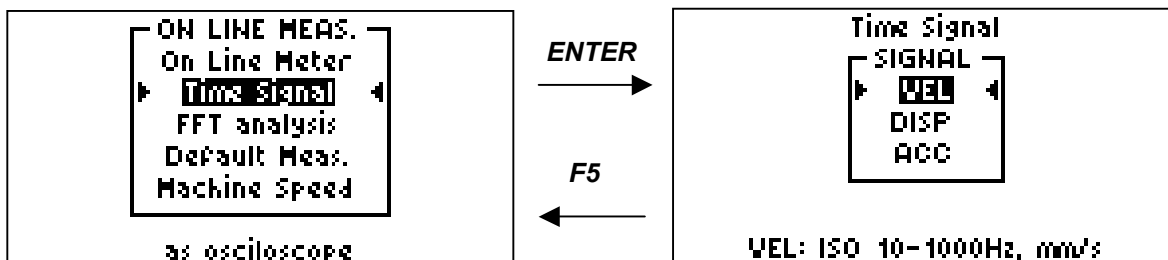


Fig. Selection of the Time Signal

Fig. Selection of the signal path

FFT Analysis

(For instrument with optional FFT software only.)

If FFT analysis is implemented, the signal paths are changed for Adash 4102/A instrument – see chapter *Types of Signal processing*. Adash 4102/A instrument is not equipped with HF signal path for measuring acceleration in high frequency band 5 - 16 kHz. Only VEL, DISP and ACC paths are implemented. Instrument firmware can be increased by *order analysis* module.

Default Measurements

The **TRUE RMS**, **TRUE PEAK** and **TRUE PEAK-PEAK** values are measured for all the three signal paths (see chapter *Types of Signal Processing*) and also the **Kurtosis factor** is calculated if implemented.

In contradistinction to Adash 4101 instrument, Adash 4102/A instrument cannot calculate Crest factor.

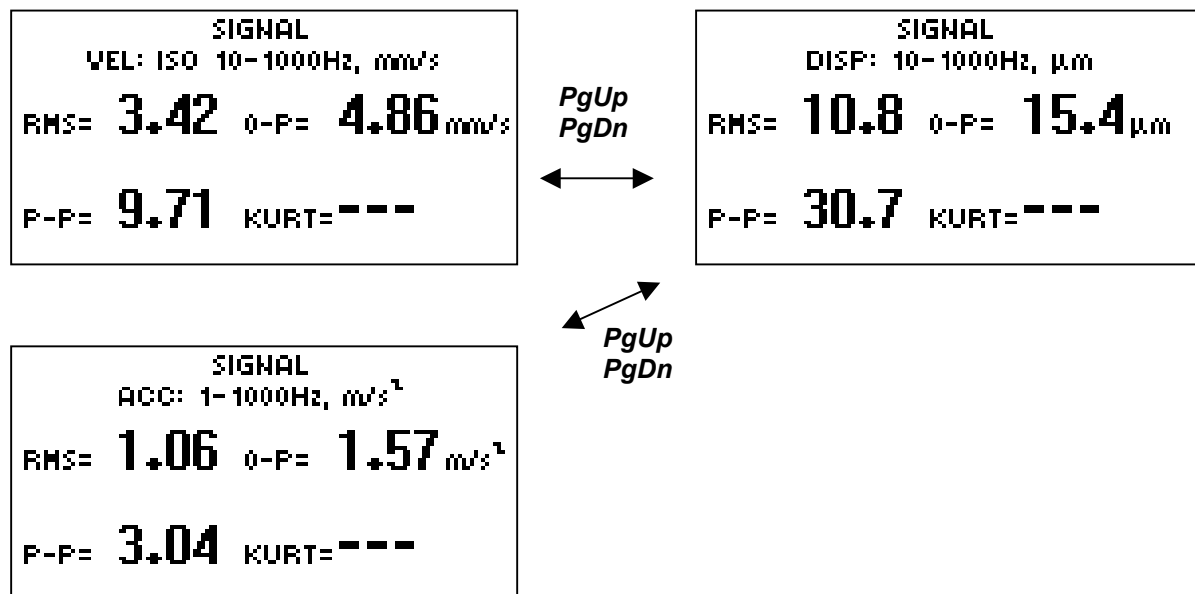


Fig. Display of the Default Meas

Instrument Setup (F4)

Setting of Adash 4102/A instrument parameters is different from Adash 4101 instrument ones at ICP sensor power supply parameter setting and at on-line bar ranges setting.

Measurement Setup



Fig. Measurement setup

ENTER

F5

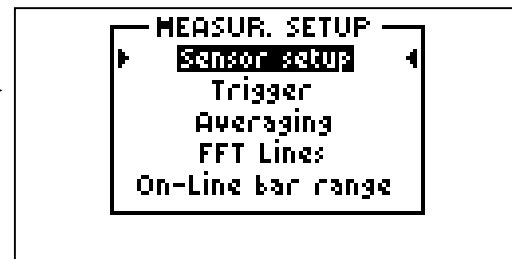


Fig. List of measurement parameters

Sensor Setup

In contradistinction to Adash 4101 instrument, it is not possible to switch off ICP sensor power supply for Adash 4102/A instrument. The connected sensor is always ICP supplied. You cannot analyse voltage signals with A4102/A instrument.

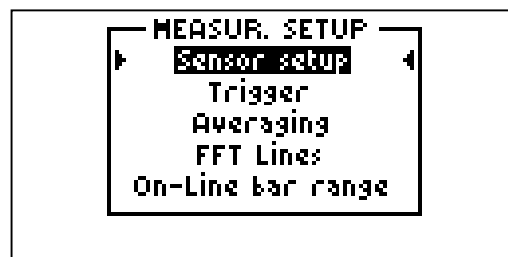


Fig. Sensor parameters setting

ENTER

ENTER

F5
cancel

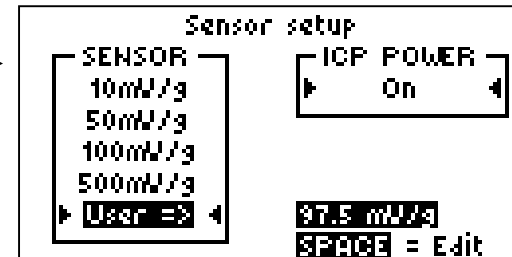


Fig. Setting of the sensor sensitivity and its ICP powering

On-Line bar range

When measuring static values in the On-Line Meter mode, the measurement result is displayed numerically and graphically. The graphical display has the character of a bar graph, whose length corresponds to the measured value. The range (maximum) of the bar graph of each signal path can be set up individually.

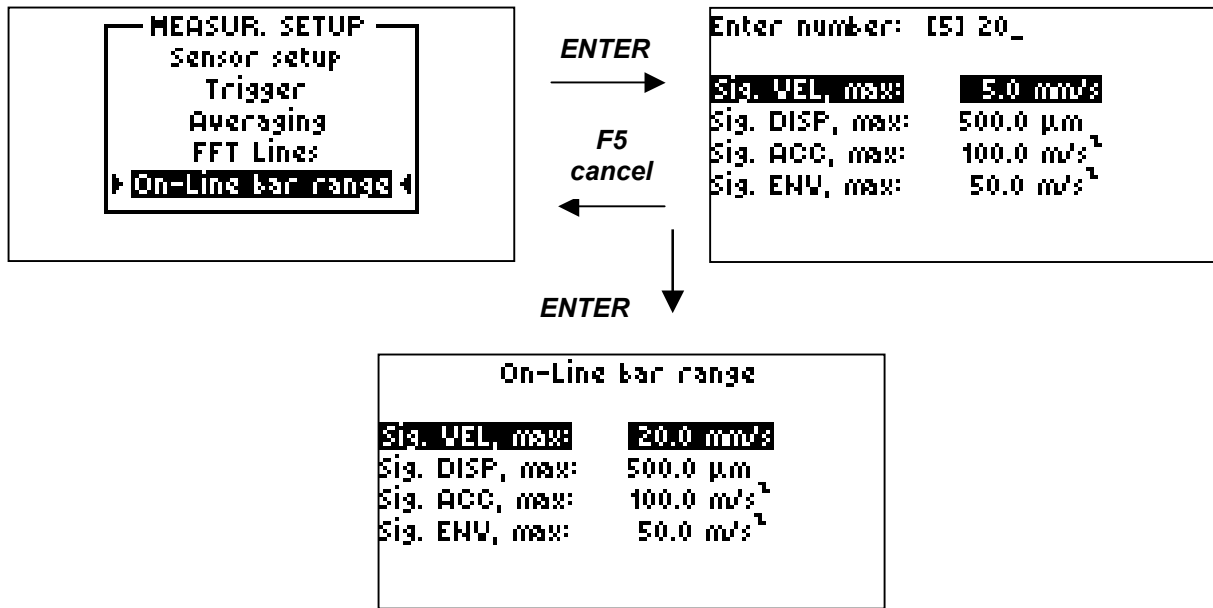


Fig. Activation of the On-Line bar range

Instrument Setup

Time to ICP off item is not active. There is impossible to switch off ICP sensor power supply.

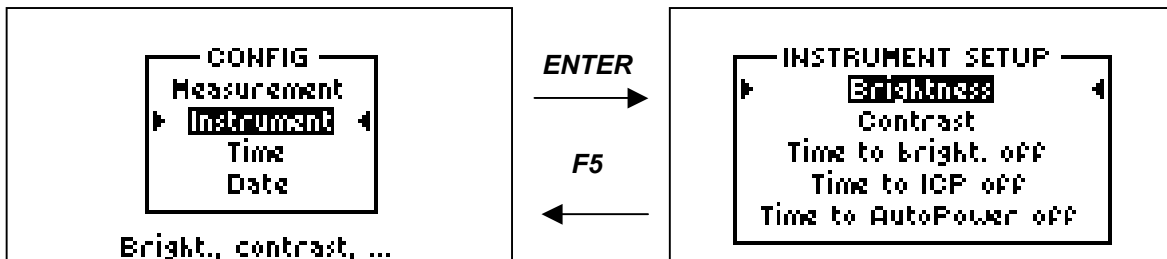


Fig. Instrument setup

Fig. List of instrument parameters

User Notes