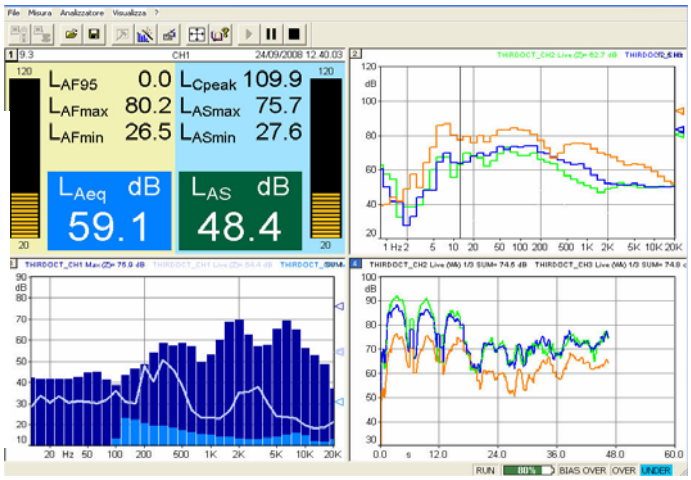
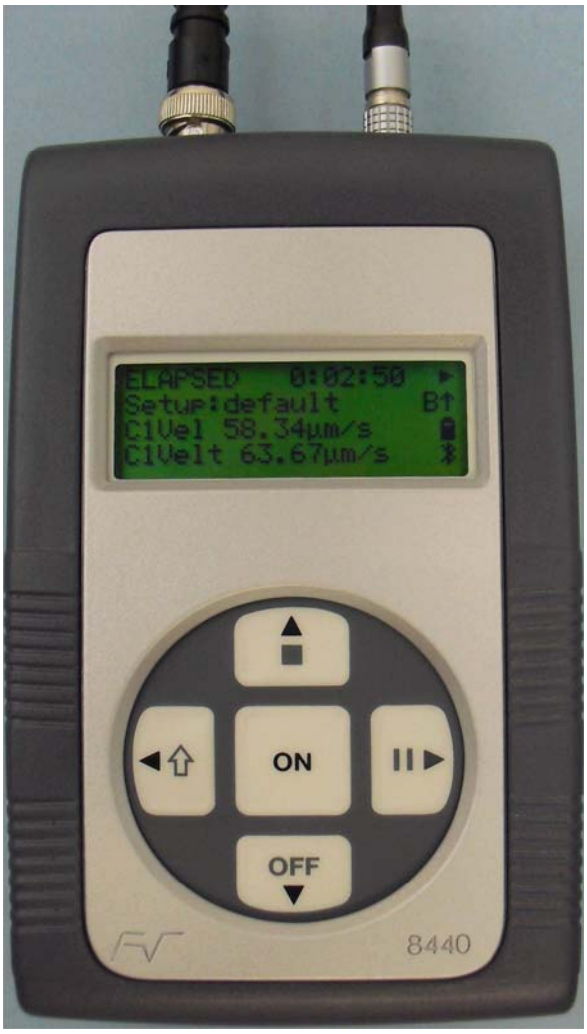
Portable 4-channel sound and vibration analyzer

- ✓ Vibration meter compliant with ISO 8041, ISO 2631, ISO 5349 vibration standards
- ✓ Sound level meter compliant with IEC 61672-1, Type 1 Integrating Sound Level Meter standard
- ✓ 1/1 and 1/3 octave analysis fulfils requirements according to IEC 61260-1 Class 0
- ✓ FFT real time analysis on four channels

- Measures on 4 channels, sound and/or vibration, in the range 0.1Hz to 22KHz.
- DAT-like recorder, 24Bit, 48KHz with more that 110dB of dynamic.
- ICP® input for each channel.
- Removable Li-Ion battery 3.7V 2600mAh battery pack and/or standard AAA size battery pack; external power supply 9-30Vdc.
- Wireless Bluetooth (2.0, 100 mt) or WiFi: easy connection of the instrument with laptop PC, for instrument setup and view measures in real time.

- Removable mass storage 4Gbyte MicroSD HC®
- Double overload detection: digital on A/D converters and analog on the preamplifier (DC-Shift).
- Imports data and real-time visualization with DNA.





Portable & powerful

Model F&V 8440 is a portable, digital, sound and vibration analyzer with massive memory for data recording.

Vibration measurement meet the ISO 8041 instrumentation standard for the whole-body and hand-arm human vibration, while the acoustic measurements comply with IEC 61672 Type 1 Integrating Sound Level Meter and IEC 61260 Class 0 1/3 Octave Analysis standards.

All four channels measure either sound and vibration, thanks to the 24-Bit 192KHz capable A/D converters, dynamic up to 110 dB is achieved over the whole frequency range [0.1Hz-22KHz].

The low-power processor ensures analysis like 1/3rd octave on all channels in real time for the full range from 0.6Hz to 22KHz, while measuring and storing RMS parameters like Laeq, LA, Peak, VDV, MTVV, Velocity [mm/s], Acceleration [mm/s²].

F&V 8440 advanced system manages the removable Li-Ion battery pack, by recharging or bypassing the internal system when the external supply is plugged in (allowing 24-hr measurement); typical autonomy with internal battery is about 6 to 8 hours. Furthermore a standard AAA battery pack is available as optional.

Universal and flexible

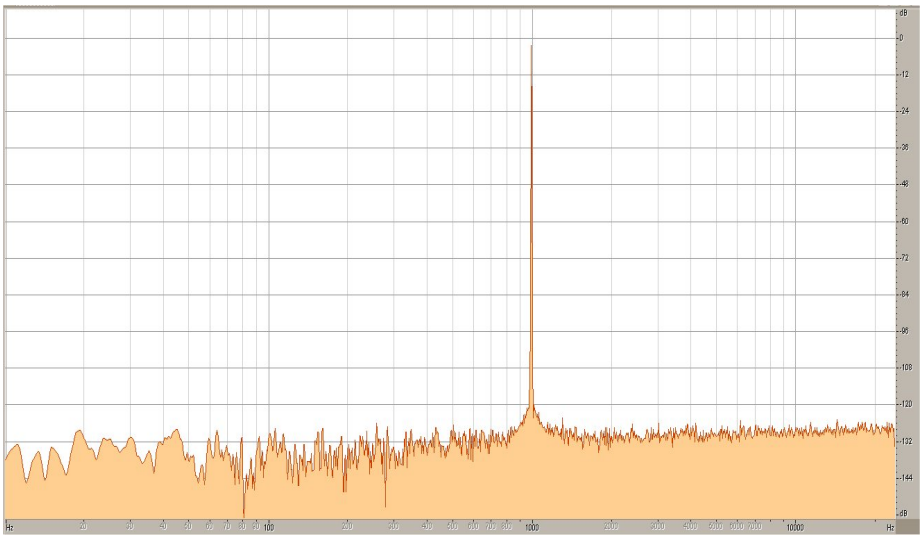
Large removable mass memory (Micro Secure Digital 4Gbyte) ensures a powerful way to log and to store data for all flour channels.

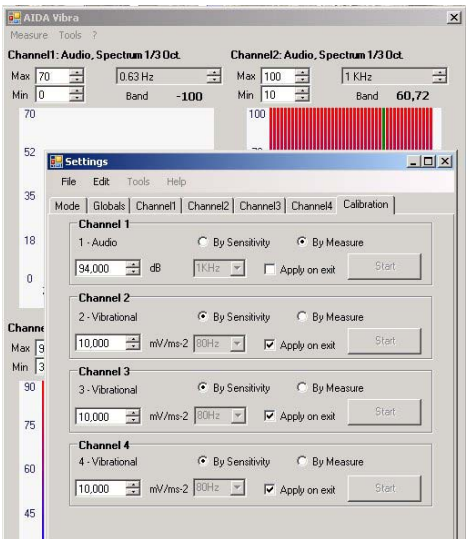
The wireless Bluetooth connection allows storing data, configuring the instruments from a remote station such as PC (very useful in an industrial environment).

Both logging data and setup is storable into the MicroSD® memory. Setup portability allows that many users can share the same instrument simply by sharing MicroSD® memory card; on the other hand many instruments may be configured easily with a single MicroSD®.

Users can also store configurations associated with the single session or measurement.

Exceptional dynamic are guaranteed during DAT recording on four channels (more than 110dB at 1KHz); furthermore FFT analysis is suitable for all channels, enabling instrument as powerful and portable spectrum analyzer.





Technical Specifications

4 input channel – one BNC connector (1 channel) and one LEMO connector (3 channels) – with power supply for ICP accelerometers and microphones.
Optional: four SMB connectors available.

Dynamic Range (DAT mode):
Up to 110dB, 24 bit ADC converters, input sensitivity 1.5/18Vpp, two measurement ranges (selectable for each channel).

Frequency Range:
0.1 Hz - 22KHz, sampling frequency : 48KHz.

User interface:
Five pushbuttons keyboard, LCD 20X4 alphanumeric,
1 LED indicating battery recharge.

Mass Memory:
Removable Micro Secure Digital HC® (4Gbyte).

Interfaces:
Bluetooth 2.0 (profiles: SSP)

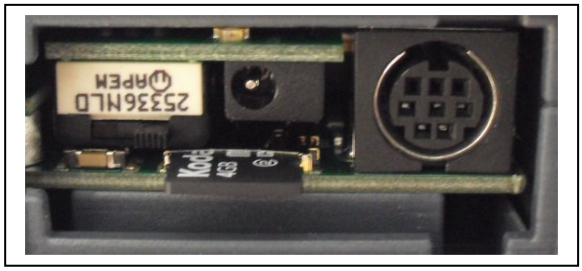
Power Supply:
Built-in single cell Lithium-Ion removable battery pack 2600mAh.
Optional: removable standard AAA battery pack.
External power/charge battery adapter:9-30VDC (500mA max.)

Temperature range (operation):
-10° to 50°C.

Mechanical

Connectors and functions

- Hard Reset switch: shuts down the instrument.
- Bypass battery switch: enables or disables the internal battery (useful for long period storage or in order to supply with external source for long period measurements).
- Removable MicroSD® HC.
- Supply plug as external power or to recharge battery (9-30Vdc).
- Recharging LED (red): on in charge, off recharge completed or not necessary.
- Auxiliary MiniDIN connector:
  - Trigger in/out
  - ADC input (from DC to 600KSamples/s)
  - RPM counter (up to 100KHz)
  - Fast SPI Port (up to 10MBps)



Signal connectors

- BNC plug for channel 1, LEMO 0B.304 for channel 2, 3, 4.
- Optional four separate SMB connectors

Specifications for vibration measurements

Standards: Type1 ISO 8041 (meets ISO 2631 ISO 5349).
Measuring function (Integral Mode): RMS, VDV, Peak, Peak-Peak, Max, Min, Time History.
Frequency weighting (Integral Mode): HP1, Wb, Wc, Wd, Wh, Wj, Wk, Wm, Vel10 (velocity mm/s).
RMS detector: true RMS detector with settling time constant from 125ms to 10s.
Analysis Mode: 1/1 and 1/3 octave bands (45 bands, range 0.6Hz-20KHz , meets EN61260:2001 Class 0).

Specifications for acoustic measurements

Standards: Type1 (EN61672-1).
Measuring function (Integral Mode): Lmax, Lmin, La, Leq, Lpeak.
Frequency weighting (Integral Mode): A, C, Z (EN61672-1), HP.
RMS detector: true RMS detector with settling time constants Slow, Fast, Impulse.
Analysis Mode: 1/1 and 1/3 octave Bands (33 bands, range 16Hz-20KHz , meets EN61260:2001 Class 0).

Electrical specifications

Input impedance:	*50KOhm / 120pF*
Conditioning:	*26V/2mA ICP*
Settling time:	*5s*
Sensitivity (input max level):	*(Range Low): 1.5Vpp, 0.1Hz - 22KHz band* *(Range High): 18Vpp, 0.1Hz - 22KHz band*
Cross-talk:	*>75 dB @ 1KHz*
Overload:	*A/D converters have a digital integrated overload system.* *Overload control of transducers ICP on channel 2,3,4 (>18V for 10s)*
A/D:	*4x24 bit A/D converter with built-in anti-alias digital filter*
Sampling Frequency:	*48KHz (anti-aliasing filters at 22KHz)*
Bandwith:	*0.1Hz - 22KHz*
Total linearity:	*>100dB for each measure range*
Basic accuracy:	*<±0.3dB @ reference temperature (23°C) in low range (acoustic measurement)* *in 20Hz-20KHz band. with Z filter.*
Amplitude indication stability:	*±0.2dB*
Frequency indication stability:	*0.02%*
Index protection:	*IP65*
Temperature range (operational)	*-10°C +50°C*
Temperature range (storage):	*-20°C +70°C*
Size (w/o transducers):	*150 x 95 x 46 mm*
Weight (w/o transducers):	*500g*
Power consumption (@ 24V):	*Battery charger (instrument off) <300mA* *Instrument in meter mode <150mA* *Instrument in analyzer mode <200mA*

According with EN61010-1 safety standard, F&V 8440 complies with Cat.II safety class for devices with signals less than 50Vrms.
F&V 8440 accepts inputs signal in 0-30V range, it meets EMC 89/336/CEE standards.

F & V s.r.l.
Headquarter: Piazzale Susa n.11 - 20133 Milano
Production site: Via Mirandola n.6 - 26100 Cremona
VAT 05825420960
Tel. +39 (0)372 560882 - Fax. +39 (0)372 560882
www.effev.it