

AUTOMATIC TEST SYSTEM FOR MILKING PLANT

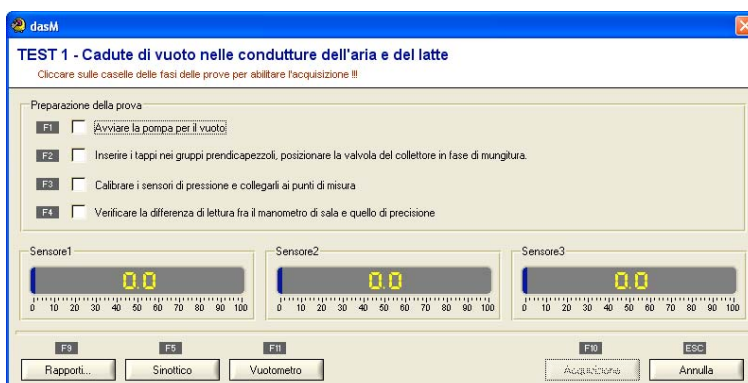
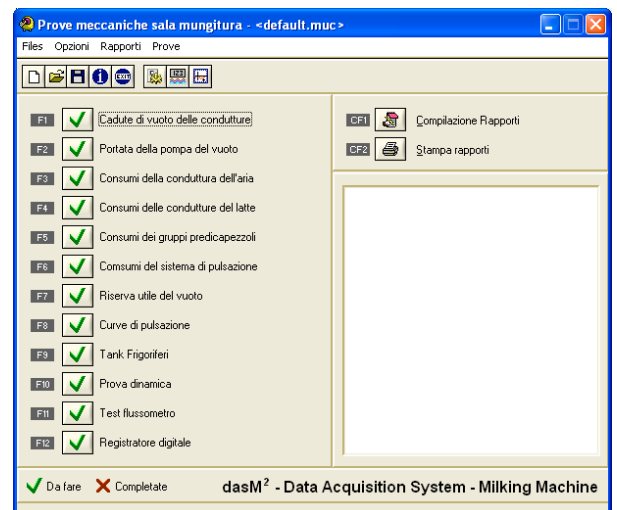


The availability of more powerful, small and very fast data acquisition systems has been accompanied in recent years by the introduction to the market of a variety of small, portable and battery operated Personal Computers known as Notebooks.

At the same time technical developments the aerospace industry has given rise to a wide range of sensors able to convert various physical parameters into electric signals. For example, a pressure signal can be easily transduced to a voltage value that can be monitored on a scope, then digitised and displayed on a meter or recorded.

By combining the advances made in these fields it has been possible to create an instrument which is capable of undertaking the complete mechanical test of milking machine installations, in accordance with the ISO 6690 International Standard. This has made it possible to satisfy the growing need to test milking machines frequently in order to improve their operation and prevent breakdowns.

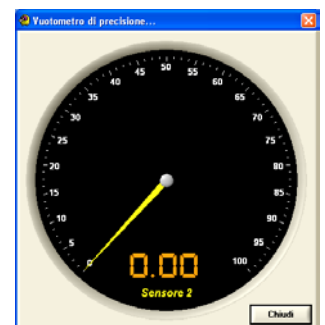
Our engineers have ingeniously brought together in one portable case a single device able to make all the measurements that were previously done by several instruments: the pulse – graph-recorder, the flow - meter, the gauge and a miniaturised flow meter. They have also created the software necessary to handle all the data that is recorded, in order to comply with ISO 6690.



pulsation chambers vacuum curves. The software enables the electrical data (eg. V or mA) obtained by the sensors to be transposed into engineering units (kiloPascal, litre / minute, etc).

The instrument makes it possible to undertake a dynamic test during milking and for the operator to set the test conditions in various ways by defining the detection threshold level of the pulsation time and modifying the printing resolution for the selected type of graphic.

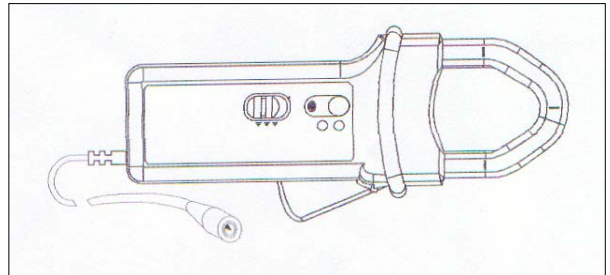
The menu options can generate the plan of a typical milking plant with illustrations showing the main points to where the sensors are connected. The measuring system is also equipped with 3 or 4 pressure sensors (the fourth is optional) to allow the operator to have simultaneous measurements at different points of the plant and to reduce the acquisition time for recording the



The latest version of the software is compatible with current software systems (Windows XP and Windows Millennium) enabling it to be used with operating systems and acquisition modules having a 32 bit capacity. This represents a major advance on a former version that could only operate on Windows 98 having a 16 bit capacity.

The instrument has 6 operating channels. Four of these are connected to pressure sensors, one is connected to the flow meter and the other one is connected to the amp meter. The amp meter allows to measure also the fluctuations generated by the use of a pump controller system.

[A pump controller system allows to change the number of revolutions of the pump. The amp meter is a probe that measures the variation of electric absorption of the pump. You can connect the amp clamp probe on the 6th channel](#)



The data updates every 250ms (earlier version 500ms) giving the operator a total real time effect.

Technique specifications:

Environmental:

- Working temperature: 0 to 40°C
- Strong case: Constructed with impact absorbing material. 47 (W) x 18 (L) x 38 (H)-
- Weight: 14 kg Pc included
- Power supply: 110-220V 50-60Hz
- Internal rechargeable battery: autonomy 90'

Personal Computer (minimum configuration delivered)

- Processor: Pentium IV Notebook
- RAM: 256 Mbyte
- Hard disk: 60 Gbyte -
- Display: 15"
- Software language Italian, English and French

Digital acquisition system

- 8 channels
- A/D converter 12 bit
- Maximum sampling rate: 100kHz

Pressure Transducers

- Measuring range: -100 to +150 kPa
- Signal out: 0 to 5 V
- Typical accuracy: ±0,15 %

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