

# The new Flow-meter Measurement device at Pneumofore, in 2015

## *Pneumofore and pvt-technology: Both winners*

**Article by Eng. Friedrich Pötter, Managing Director of pvt technology  
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Pneumofore SpA, Rivoli (Turin), Italy, the traditional family company focused for more than 90 years on the development, patenting, production and maintenance of rotary vane, screw, and reciprocating technologies, industrial compressed air and vacuum generation.

The remarkably low operating and maintenance costs, as well as the robustness, reliability and longevity of Pneumofore products are legendary.

A top-class team of engineers, headed by the owner, manager and Dipl. Ing. Daniel Hilfiker, are constantly working on innovations and customized solutions. This also explains the huge worldwide success of this company.

Daniel Hilfiker is a thoroughbred engineer. He strictly rejects any manipulation of the machine's performance data. Sugarcoated data are repugnant to him.



*Eng. Daniel Hilfiker, CEO*

Only real measured performance and power consumption data can be found in the documentation of Pneumofore. Pneumofore is vehemently transparent because the efficiency of its machines is exceptionally high.

The manual measurement of the capacity of compressors is not easy, especially since it goes in this application to very large linear measuring ratios of  $> 1: 100$  is ( $m^3/h$ ), with pressure ranges from 2.5 to 10 bar. The measuring team of Pneumofore could always measure a limited load level and calculate what availed, which took about 15 minutes for each load step.

For a long time, Mr. Hilfiker searched for a very accurate flow measurement system, assessing the efficiency and performance of his machines, to simplify and to certify every machine's performance. Thus, each customer of Pneumofore is issued with an efficiency certificate.

The challenges were: Quasi no permanent pressure loss. Extremely high accuracy over the entire large measurement range, at each pressure and at any temperature. No value drifts. High robustness and no wear. Nobody could satisfy such a demanding request.

Through word of mouth Mr. Hilfiker came across pvt-technology, a company which in this league is exactly at home.

After data exchange, pvt-technology received the contract to equip the test benches with precision flow measurements for compressed air with PoetterSensors® and the C 621 flow computers.

The exceptionally large measuring ratio could only be realized continuously, over 2 measuring Tubes each with 4 DP transmitters in splitting Range.



*2 measuring tubes (stainless steel) DN 80  
and DN 150 with two PoetterSensors®  
and two DP- Transducers for each pipe*



*Our C 621 flow computers, based on the improved Differential Pressure calculation methods and in accordance with EN ISO 5167, continuously display the precise flow measurement of two measuring tubes with four DP transmitters in Splitting-Range*

After commissioning the PoetterSensors® with the associated components came the exciting moment:

The results of the manually measured and calculated values were compared with the measured values of the PoetterSensors® without the calculating engineers initially knowing about these results.

Four different sized compressors were measured with various load levels and the results were compared.

As a result, both measurement methods produced almost identical data, with a deviation of +/- 0.3 to 0.7 %, which could not be a coincidence with so many comparative measurements.

Those who know about flow measurement, know how exceptional these values are in the comparison of two systems.

Conclusion: In this comparison of two systems, there are two winners.

On the one hand, it was proved that the previous manual measurements and calculations of Pneumofore were extremely precise.

Secondly, it was confirmed that pvt-technology with the PoetterSensor® generate the most accurate readings and it considerably facilitates the measurements of performance and efficiency.

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But there is already a new project at Pneumofore:

Mr. Hilfiker wants now also the performance of various vacuum pumps to be measured, in the pressure range from 30 to 450 mbar(abs). The pvt - CEO Friedrich Pötter has already said that, according to his calculations, he can.

However, because it is new territory for pvt - at least in the required precision - we will begin with a test measurement.