



Sensor for the measurement of flow rate

Bonesi Pneumatik in Legnano (MI) presents on the market the BK02 MPD 12, a new flow rate sensor for compressed air and neutral gases, that does not need maintenance, developed by the German Company Knocks Fluid-Technik.

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When in an industrial plant the costs for the energy rise, the exact determination of the needs of flow rate and the precise measurement of the consumptions become basic factors for the optimisation of the costs and the achievement of the energetic efficiency. Such a new device is characterized by the high precision, for the facility of the installation and use. Check of the consumptions for the control of the costs of the company, measurement of the leakages, monitoring of air buffers or applications of dosage, monitoring of the pneumatic inlet on robots for painting: all of these are some technical examples that underline the importance of a precise measurement of the flow rate. For the measurement of the flow rate normally systems with thermal hot wire anemometers are used

or simple turbine counters. But, with such kind of instruments it is particularly difficult to obtain a good quality of measurement either for the possible factors of interferences or to the waste of time for the necessary maintenance. Furthermore, the traditional flow rate sensors often need a high purity of the fluid and a certain length of rectilinear tubing, before the inlet and after the outlet of the device, necessary to reduce the negative effects of the turbulences.

During the development of the BK02 MPD 12 Knocks Fluid Technik has imposed to itself the objective to get high levels on the quality of the measure-

ment and to reduce the costs for the installation and the

maintenance of the device. The quality of the fluid does not influence the process of measurement of the flow. In fact, the polluting factors present on the standard pneumatic applications do not create damages to the sensor.

The thermal hot wire, that requires a complex structure of bypass at the internal of the sensor, it is not used in this device and thanks to this fact it was possible to reduce at the minimum the overall dimensions and the necessity of a periodical cleaning.

The BK02 MPD 12 is of simple installation and it has a strong structure; such characteristics give to the device the ideal features for applications also in difficult industrial environments offering furthermore the electrical protection degree IP65. It uses a system of differential measurement of the pressure, with quick response timing for the indication of the value of the flow rate, volume and pressure.

Filter element at the IN, calibrated diaphragm, differential exit

Two pressure transducers are used, one at the IN and another at the OUT, separated by a calibrated diaphragm. The value of the flow rate is calculated on the basis of the difference of pressure and visualized on a big display with digits of large dimensions. Further options of visualisation permit to read the values of volumes and of pressures. Such device is available in two ver-



The flow rate sensor BK02 MPD 12.

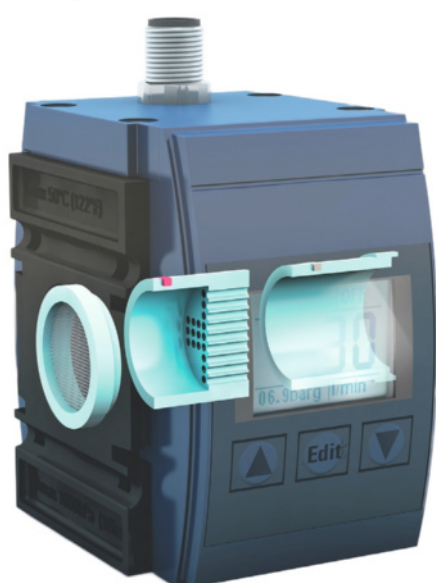


The software of data analysis.

sions: one with range of measurement from 150 l/min up to 2.000 l/min (BK02 MP1D 12) and one from 200 l/min up to 5.000l/min (BK02 MP2D 12), both with a pressure range up to 16 bar. It is possible to choose the visualization of the figure among the following measurement units: l/h, l/min., l/sec., m3/h and gal/h. The dimensions are particularly compact (102x63x83 mm.) and has two digital exits, with commutation values free settable and of an analogue exit for the visualization of the value of the pressure. For both the digital exits can be set the commutation value, respectively of flow rate, of volume and of pressure. Thanks the presence of three buttons it is possible to set the device easily and quickly; furthermore, a security code allows to lock the values settled.

The sensor integrated in battery

The BK02 MPD 12 can be integrated in a group of air treatment of the modular series FUTURA size 2 with ports G1/2" or can be used as a single unit, using the relevant bracket kit,



Peculiarities of the system:
 - **filter element at the IN;**
 - **calibrated diaphragm for the pressure difference;**
 - **differential exit.**

in any position. The device is made by the original techno-polymer Grivory GV6H integrated with a 60% of glass fibres that guarantee lightness and high robustness with a competitive price in comparison to construction in metal. The use in manifold of the BK02 MPD 12 does not create working limits to the other units of the group thanks to its limited pressure drop. It is useful for the control of components in continuous working and it can efficaciously act in order to optimise the performances of the pneumatic system. Possible air leakages or significant variations of the flow rate can be noticed and by the set of the digital exits alarm signals can be generated.

The sensor integrated in battery.

The software of data analysis

The software of data analysis: with such software, developed specifically for the BK 02 MPD 12, it is possible to keep under control the consumption of the compressed air, in a simple way. Connected with a PC, the measurement data are collected and processed in order to obtain a clear picture by diagrams relevant the instant consumptions, the total volumes and the situation of the digital exits. The results of such analysis can be easily filed. The flow rate sensor is presented by **Bonesi Pneumatik** together with the complete range of F.R.L. produced by Knocks Fluid-Technik. Such range include Filter-Regulators in one body, Filters, Regulators, Lubricators and the most requested accessories requested for such kind of products. The units, according the various series, are available with ports from 1/4" to 1".

