CETA® Newsletter

Dear readers,

Here is our newsletter no. 13, issued for the CONTROL 2009 trade fair. You will find us at our exhibition stand (hall 1, stand 1423), where we will show you some applications. We will present our new flow meter CETATEST 915. Our practical tip deals with the capability index C_g, and we will particularly look into the questions of how it can be improved and whether a low C_g value automatically means a metrological knock-out criterion.

Wishing you a pleasant reading,
Yours,

Günter Groß
Managing Director

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The new flow meter CETATEST 915

NEW

The new CETATEST 915 is the follow-up model of our successful flow meter CETA 900. The first devices of the new series will be available in the third quarter of 2009. The 24 bit AD converter with its high clock rate permits very short test times. Various flow ranges can be configured via suitable laminar flow elements. Alphanumerical designations can be assigned to each of the 64 test programs.
In addition to the standard interfaces (digital I/O, RS-232), profibus, ethernet and CANopen interfaces are available upon request. The test program settings can be saved on a USB stick. This permits an easy exchange of parameters between identical devices.
Besides, it can also be used to save test results and measurement curves. The graphic user interface has been revised and provides a lot of helpful and relevant information.

Up to 5 years warranty for the CETATEST 815 series

NEW

As of now, all new devices of the leak tester CETATEST 815 series will have without extra charge a warranty of 3 years (provided regular maintenance is ensured). Beyond that, we provide the opportunity to extend the warranty by 2 more years at a low cost. This results in a total warranty period of 5 years, which will contribute to maintain durable, high-quality test devices in the production line. The reason for this decision is the low failure rate of the test devices which are being serviced regularly. This rate has been established on the basis of an evaluation of the servicing cases over a period of many years. With this decision, CETA Testsysteme GmbH emphasizes durably the confidence in their technical products. Together with the standard DKD calibration (without extra charge), this will mean for the customer an extremely interesting bonus package.

CETA maintenance contract for leak test devices and flow meters

The breakdown in the production line of a test device used for quality control can be very expensive. This can mostly be prevented by a regular maintenance. CETA Testsysteme GmbH provides maintenance contracts for a period of 3 years for their test devices. Once a year, we will contact the customers at an early date to fix an appointment for servicing and calibration works. This allows a better timing and reduces the administrative inconvenience due to discontinuation of enquiries and offers.

A regular calibration fulfills the requirements of the control of measuring and monitoring devices. Besides, it also helps save money, since the conditions as per maintenance contract are more advantageous than individual orders. If suitable test devices corresponding to the customer's installation are available, we can provide for the duration of the servicing work replacement devices at a good price. This servicing package is CETA's contribution to maintaining the high quality of the testing devices and ensuring the manufacturing capability.
This service, which has been offered since 2000 in whole Europe, has now been even better

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adapted to our customers' needs. Our CETA maintenance team is servicing and calibrating more than 750 test devices each year. We also offer upon request servicing and calibration of test devices from other manufacturers.

CETA practical tip:
Critical look upon the capability index C_g

The capability index C_g (please refer to CETA newsletter no. 5) is used for assessing the reliability of a test process and is a measurement for repeat accuracy. It is determined on the basis of a statistical evaluation. In practice, index values C_g > 1,33 or even C_g > 1,67 are required. C_g is an objective means of assessing whether the test process is characterized by a reliable repeat accuracy – e.g. whether good and reject parts can be clearly separated. In order to determine C_g, 25 measurements are performed on a master tight part. Afterwards, again 25 measurements are performed with a test leak added to the test circuit, this test leak having a flow value which should correspond as far as possible to the permissible leak rate. This is used to simulate a marginal reject part. Quantitatively, C_g is generally defined by the following relationship:

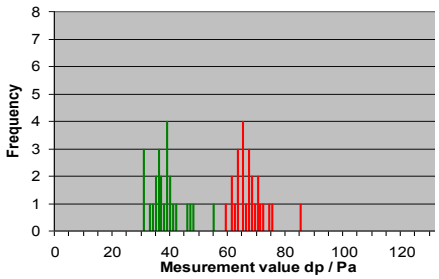
$$C_g = \frac{0{,}2 \cdot T}{6 \cdot s}$$

In this metrological context, the tolerance T is the difference of the average values of good and bad parts. The standard deviation s is calculated on the basis of the distribution of the measurement values of the marginal reject part.
A greater C_g value can be obtained by
a) Increasing the tolerance T
- Increasing the gap of the distributed average values of the good and reject parts
- Prolonging the phase times (in this case particularly: test time)
- Increasing the permissible leak rate
- Using filling material (volume reduction)

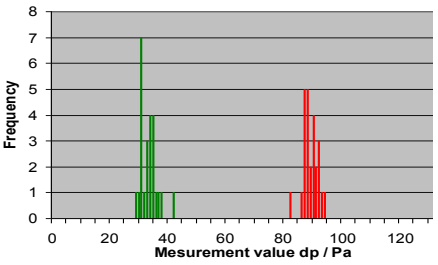
b) Reduction of the standard deviation s
- Reduction of the spread of measurement values of the reject value distribution
- Prolongation of phase times (in this case particularly: stabilization time)
- Steadier test conditions (test part, adaption, layout of the test location, test parameters)
- Reduction of the influence of disturbances (temperature, draught, vibrations, movement)

The graphical examples for different C_g values show that a clear separation between good and reject parts is already possible with C_g considerably smaller than 1,33. Under special circumstances and in case of difficult testing tasks, it might be useful to consider permitting a lower value for C_g. However, this can only be decided on the basis of measurement series. In case of difficult test tasks, CETA checks the technical feasibility and performs test measurements to determine C_g. These can be used by the customer as a basis for further decisions.

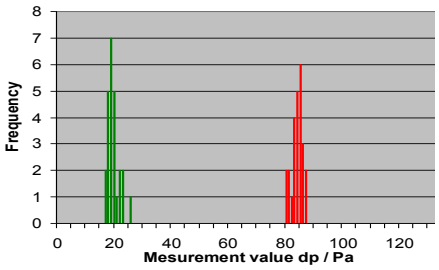
C_g = 0,174 T = 28,64 Pa, s = 5,50 Pa



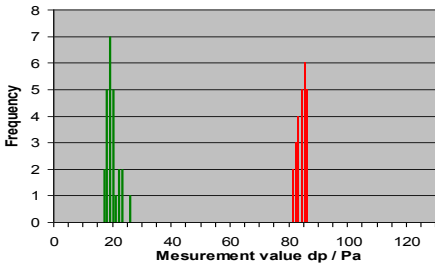
C_g = 0,711 T = 55,60 Pa, s = 2,91 Pa



C_g = 1,082 T = 64,16 Pa, s = 1,98 Pa



C_g = 1,354 T = 64,24 Pa, s = 1,58 Pa



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