



Dear readers,

Ten years have gone by since we launched our first CETA Newsletter. This information medium has met with such positive response that we are able today to celebrate a double anniversary with the current 25th issue and ten years of existence of the CETA Newsletter. Our practical tips in particular are widely appreciated. Your positive feedback encourages us to continue publishing this medium.

You can find us again at the CONTROL 2015 in hall 1, stand 1423. We are looking forward to meeting you.

Wishing you a pleasant reading,  
Yours,

*Günther Groß*  
Managing Director

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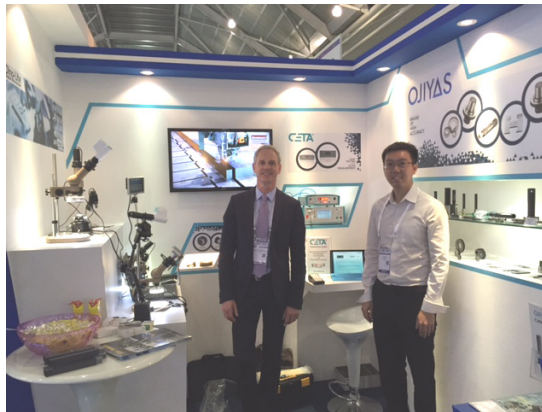
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### CETA Test Devices at International Trade Fairs

CETA now counts international cooperation partners in 11 countries. They present CETA's testing technology at all relevant national leading trade fairs. Lately, in March 2015, our cooperation partner Cressto s.r.o. took part in the AMPER trade fair in Brno, Czech Republic, among 600 exhibitors from 22 different countries.



In April 2015, our cooperation partner LFC PTE had a stand at the MetrologyAsia2015 trade fair in Singapore, an event hosting more than 400 exhibitors from 30 countries.



During the trade show appearances, CETA sent support staff to assist the cooperation partners. This resulted in a number of interesting contacts and promising projects.

### Available menu languages of CETA test devices

In the course of increasing internationalization of CETA's business activities, the available menu languages for the current series of leak testers CETATEST 815 and for the flow tester series CETATEST 915 have been considerably extended. So far, four language options can be selected from the following list and installed in the device: German, English, French, Spanish, Turkish, Czech and Hungarian. And for the relative pressure leak tester CETATEST XS, a Vietnamese option is also available. Additional languages can be integrated in a simple way. With this flexibility, we are consistently bringing our test devices into line with the export markets.



### CETA Receives for the Fourth Time Excellent Credit Rating

For 2015 as for the previous years 2012 through 2014, CETA has been awarded "excellent credit rating" by the agency Bisnode Deutschland GmbH, and formerly by their predecessor Hoppenstedt Kreditinformationen GmbH (Bisnode Rating Certificate no. 318664026). The rating process consists in analyzing company information and financial key indicators in the course of risk assessment. This results in a Bisnode

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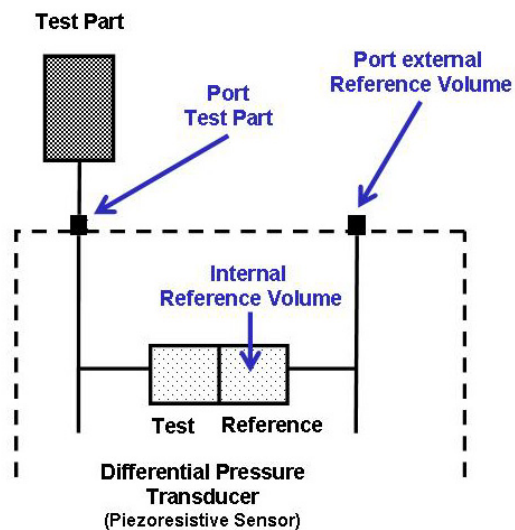
Credit Rating that reflects the financial power and probability of default of the surveyed companies. With more than 3.000 employees in 19 European countries, the Bisnode Group is the leading service provider for business-to-business information. We are very pleased about this new top-rating. This neutral and objective rating is a help and guidance for companies looking for strong, trustworthy and reliable industrial partners.



### CETA practical tip: Meaning of the Reference Volume in Differential Pressure Measurement

In industrial leak testing with compressed air as test medium, the differential pressure method is often used for measuring small pressure losses. This method is based on a comparison of the pressures in the test part volume and a leak-tight reference volume. During the filling phase, the test part and the reference volume are filled to the same pressure. This phase is followed by the stabilization phase after disconnection of the pressure regulator. During this phase, the pressure instabilities due to the filling process subside. At this juncture, test part volume and reference volume are pneumatically connected. After disconnection of the pneumatic connection, a differential pressure sensor is used to measure the pressure decay due to leakage on the basis of the leak-tight reference volume. In most applications, the reference volume is the inherent volume of the valve system. In these cases, the reference connection of the test device remains closed by a sealing cap. This is the case for most applications. However it can be useful under specific testing conditions to connect externally a leak-tight reference volume identical to the test part in terms of material characteristics and dimensions. Disturbance factors having the same influence on both volumes (change of ambient temperature, material strain) are then compensated. The effectiveness of this approach must be checked by tests for the specific applications. In this connection, please also note that: When the reference volume is increased by an external volume, it is refilled at each test cycle, just like the newly adapted test part. This affects the necessary filling time as well as the overall testing time. A thermal effect can occur due to the fact that the external reference volume is refilled and vented again at each test cycle.

It is necessary to ensure that connection of the reference volume to the test device is leaktight. In the case of capacitive or inductive sensors, the response signal is provided through mechanical action of an inner sensor component when the pressure changes (modification of capacity or inductivity). This is associated with a change of volume in the differential pressure sensor, which distorts the measured pressure decay. This effect is all the greater the higher the value of the test pressure. When using such sensors, the reference volume has to be increased in order to reduce the volume effect. The presence of a volume effect in the sensor can be determined experimentally. For this purpose, we need a test volume of known size and a test leak with known flow rate. We choose a stable measuring regime and determine the pressure decay with connected test volume and test leak. Taking due account of the volume of the measuring circuit and the internal volume of the measuring circuit of the test device (manufacturer's specification), we can compare the measured pressure decay with the expected values (see CETA Newsletter no. 1). If systematic deviations are noted, confirmed by test volumes of different sizes, a volume effect on the sensor is likely. In the case of piezoresistive differential pressure sensors, as used exclusively in CETA standard test devices, the pressure is directly converted into electric voltage (without any mobile components). There is no volume effect with these sensors.



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