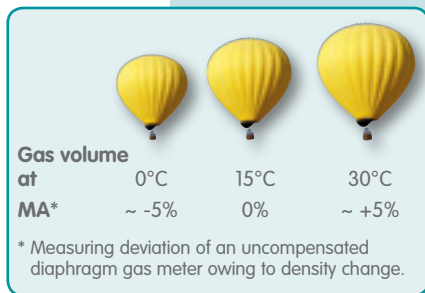


Industrial diaphragm gas meter with temperature compensation

Flying on the wings of success

Nothing spurs you on like success. A successful product is updated and further developed producing a product family. Diaphragm gas meters with mechanical temperature conversion may not have wings per se, but supplement the BK series product family with increasing success.

Gas density changes with temperature. In the case of natural gas, as the temperature changes, the calorific value relative to the volume also changes. In accordance with the DVGW Code of Practice G 685, the billing temperature is 15°C. At low temperatures of less than 15°C, the end customer receives more energy (usable heat volume) than what is displayed on an uncompensated gas meter.



Mechanical temperature conversion for diaphragm gas meters offers the most economic way of compensating temperature influence. The volume of the diaphragm measuring chamber is adjusted using a bimetallic element. At low temperatures, the volume of the measuring chamber is reduced, the consumption indicated is equivalent to the amount of usable heat of the gas. Since billing accuracy has thus been significantly improved, the DVGW Code of Practice G 685 that is accepted in Germany grants network operators and end customers the right to install gas meters with temperature conversion (TC), provided that the operating temperature deviates considerably from 15°C.

Since mechanical temperature compensation has been introduced, the number of diaphragm gas meters with TC has risen continuously compared to the number of uncompensated meters. Following the introduction of temperature compensation for the measuring unit of the BK-G4 (1993), this technology was also installed for measuring units V1.2 (BK-G2.5) and V6 (BK-G10 - 25).



Measuring unit V6T crank plate with bimetallic element

In the case of industrial diaphragm gas meters, the temperature influence is usually compensated by electronic volume correctors. In comparison to this, mechanical TC is a relatively cost-effective solution. In addition, the operating costs are noticeably reduced as it is maintenance-free, has a longer service life and, in some countries, longer calibration validity. In Germany, for example, the period of validity of calibration for diaphragm gas meters of sizes G16 to G100 – alternatively also with mechanical TC – is 16 years. An electronic volume corrector only has a calibration validity of 5 years, however.

Elster is now extending the product family of the BK range with mechanical TC up to size BK-G100 to meet the requests of many customers. Types BK-G40T, BK-G65T and BK-G100T are expected to be available as of September 2010.

Connected to this are extensive development activities as well as specification of testing requirements and co-ordination of this with the PTB to comply with the relevant directives.

Size	Period of validity of calibration in Germany	
	Standard diaphragm gas meters, alternatively with TC	Volume correctors
G2,5 – G6	8 years	5 years
G10	12 years	
G16 – G100	16 years	

Unfortunately, industrial diaphragm gas meters cannot fly – here Elster offers a cost-effective solution in the field of gas measurement which gives low service life costs as well as investment security for many years. And that means no wings required!