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TECH TALK 0091
“MINIMUM MEASURED QUANTITY” FOR METERS
29/04/09

BACKGROUND

“Minimum Measured Quantity” is also referred to as “MMQ” and “Vmin”. They all mean the same thing.

“MMQ” of the system must be clearly marked on the dial of any indicating device visible to the user during measurement.

All NMI approvals list the MMQ for each meter (including Diptronic).
Eg. SAMPI M7100L, Diptronic 200L

NMI Test Procedures use their figure for MMQ, termed Vmin, to calculate various subsidiary requirements such as maximum permissible error, allowable hose dilation etc.

PROBLEM

“Vmin” is essentially a technical term which relates to the very basic metering and indicator assembly and is quoted in the approval. “Minimum Measured Quantity” describes the minimum quantity which can be delivered through a SYSTEM and is guaranteed to remain within maximum permissible error.

EXAMPLES

A typical meter system on a tanker includes a hose reel. Hose dilation can be significant with modern pumping pressures therefore hose dilation (depends upon length and diameter) should be allowed for in order for the SYSTEM to achieve the 0.3% max error at initial certification + 0.5% max error at in-service checks.

Diptronic is allocated a MMQ of 200 litres in the certificate. However Liquip state that a full-sized tanker with 8,000L compartments should be labelled as 1,000 litre MMQ. This reason is that the tank itself forms half of the measuring system: plus, if the tank is not sitting on level ground, there is a further possible error.

SUMMARY

Never use the technical MMQ stated in the certificate. Always calculate and label a practical MMQ for the total installed SYSTEM.

DG
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