Application notes V-cone flowmeter

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Application: Hot air measurement in square ducts without straight pipe runs in or out of the meter

Customer: Shell Refinery, Gothenburg Sweden

THE PROBLEM

Shell Refinery had the need to measure hot air in 2 locations with a low pressure drop. The problem was that the hot air was blown through square ducts with a dimension of 1400 x 502 mm and 1200 x 451 mm. There was a split off from a larger duct in two legs and where the flowmeter was to be placed there was literally no straight pipe runs. The total straight section available was 1800 mm; for all ducts the same.

Since Shell needed the flow information for environmental reasons it was important to find a quick solution to the problem.

THE SOLUTION

Since a V-cone for square ducts is not available Ansko as the V-cone rep in Sweden thought to resolve the problem with thermal mass insertion flowmeters with multipoint sensors. Two meters were to be used. Due to information given by the manufacturer of the thermal mass meters a guarantee for good accuracy could not be stated and in addition to this the price was unacceptable to the customer.

With the experience from a great many V-cone installations without straight pipe runs Ansko got the idea to cut the square duct and make a passover to a standard V-cone inline flowmeter. The McCrometer company was contacted for the application and with their immediate positive response to the application Shell was quoted 4 V-cones 600 mm in diameter. Shell reacted positively but informed that they needed all 4 meters within 4 weeks due to their production stop.

McCrometer shipped the meters within 3 weeks including transportation and the meters were fitted immediately since customer had already made provision for the passover with cones from the square ducts to the piped V-cones.

ANSKO never heard back from the customer so after a month or two we contacted Shell Refinery and they confirmed that all V-cones performed excellently and to their total satisfaction.