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APPLICATION GUIDE

SPONSLER

TURBINE METERS STEAM APPLICATIONS

Here are some considerations you will want to incorporate when sizing a Turbine Meter for STEAM applications.

- 1) A meter mounted readout (like IT400) may only be used if the steam is saturated and BOTH Temperature AND Pressure remain constant during the measurement period.
- 2) A Turbine meter may also be used if Pressure and Temperature are varying during the measurement period, BUT the steam must REMAIN saturated. Use the meter, a Pulse Transmitter (SP714) and The remote microprocessor model SP4000. Temperature and Pressure Sensors are also needed.
- 3) You may determine the applications ACFM range as follows:
 - * Convert your flow min and max to the ENGLISH system value PPH.
 - * Determine the Vg (Specific Volume/cu ft/lb) from the steam tables.
 - * Use the Formula $PPM \times Vg = ACFM$ (determine MIN & MAX).
- 4) When sizing the meter - the MAX ACFM should not exceed 70% of the Sponsler Published ACFM for "GAS" applications. Steam is really TWO-PHASE Flow (Liquid and Gas). Saturated Steam may have minor "slugs" or "dings" Of water that are in the flow. To guard against ROTOR DAMAGE, the reduction of the ACFM flow MAX to 70% places the VELOCITY of the fluid in a range that should not damage the rotor.
- 5) If the heat is above 65 deg C - use a Temperature EXTension. Usually P/N TE-3/4-6A.
- 6) If the steam is of poor quality (i.e. possible MAJOR slugs of condensate) use a Venture Measurement TARGET meter.
- 7) 10D of meter size STRAIGHT piping is needed before and after the Meter - same as in GAS applications.