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APPLICATION GUIDE

SPONSLER

TURBINE METERS
GAS APPLICATIONS

Sizing a turbine meter for a GAS application is not as easy as some think.

When working with LIQUIDS, a meter the same size as the LINE/PIPE size is usually the right choice.

When working with a GAS, the meter is RARELY the same size as the LINE/PIPE.

If you are seeing guidance in a GAS meter selection, or a quotation from Tryon Trading, please review the information below before filling out our ADS (Application Data Sheet).

Gas applications are SPECIAL. They are not like liquid applications. The most common mistake is to ask for a quotation just giving the line size. That usually works for liquids, but NOT for a GAS. Gas meters are sized by complete application data.In more than 70% of the applications we review, the meter for a gas application is NOT the same as the LINE/PIPE. It is usually SMALLER.

There are TWO separate reviews that are required when approaching a gas meter sizing.

(1) In order to be sure the meter will survive start-up and shut-down, when pressure and temperature swings are present, it is important to know the MAX and MIN flow in ACFM that the meter will be subjected to. To determine that, we need to know the MAX and MIN for each of the following: FLUID FLOW, TEMPERATURE, and PRESSURE

The max and min flows in ACFM are determined by first converting all the units of measurement to ENGLISH units (Internationally they are usually stated in METRIC). We need to know the unit of measure of each function. We can then use BOYLES LAW (see meter specs) to arrive at ACFM. The max ACFM will be at the max fluid flow, max temperature and min pressure. The min ACFM will be at the min flow, min temperature, and max pressure.

When requesting TRYON TRADING to size and price a meter for gas Application – it is VITAL that you give us the MAX/NOR/MIN for FLOW, PRESSURE, and TEMPERATURE.

(2) It is also very important that we know the NORMAL (Operating) ACFM for the application. Here we need to know the NOR for FLOW, Temperature and Pressure. We need this information for TWO reviews in selection a meter size:

*** When sizing a turbine we like to see the NOR flow at/above the Middle of the meters ACFM flow range. Turbines perform BEST in the upper ranges of the meters flow range.**

*** We also need to know if the Pressure and Temperature are going to be constant during NOR (operating). If they are constant – then a meter with a simple meter mounted readout may be used. If they are NOT being held constant, then Pressure and/or temperature compensation will be required. That forces us to us a transmitter, a remote microprocessor that has temperature and pressure compensation capability as pressure and/or temperature sensors. The result is a more expensive installation. When sending Tryon Trading the ADS (Application Data Sheet) be sure to check the BOX indicating if P & T are constant.**

If your fluid is standard- OK. (like 100% concentration: air, oxygen, nitrogen, etc). If it has a special name or brand name further information is needed.
For special fluids like mixed gases (methane), we will need to know its SG (Specific Gravity) and percent concentrations. Other information available from the customer may be needed – like what MATERIALS are they using in valves, pumps and piping? Presenting this material in an ADS sheet can save time and assist in meter material selection and proper blade angles for the turbine blades.

Please remember we can not place our own orders on Sponsler without giving then all the pertinent application data. It is therefore best to get all this information resolved at quotation time to avoid finding out after an order has been placed that a more expensive material is needed. The ADS sheet provides a good guide for reviewing all the application data with the customer.

We hope the above will alert you to the special needs that are involved when selecting a turbine meter for gas applications. When the gas is STEAM, please
See the APPLICATION GUIDE for that fluid – as there are MORE factors to consider When making the sizing selection.

Tryon Trading will be glad to select and price the proper products for your customer's application. Just send our ADS (Application Data Sheet) and we will review and quote. The above APPLICATION GUIDE gives information on how we review and apply the ADS information in the product selection.