Clocking a Meter

Operating Instructions

Clocking a meter to determine the flow rate.

Residential/Domestic

1. Determine the meter drive rate. The drive rate is determined by the size of the meter and the drive dial hand which is the second dial from the left at the bottom of the index. It will be labeled either 1, 2, 5, 10 or 100 feet. (A) Each revolution of this dial will represent how many cubic feet of gas that have passed through the meter.

2. Get a watch with a sweep second hand or a stopwatch.

3. Measure the time in seconds that it takes the drive dial hand to make one complete revolution.

4. Plug the meter drive (cubic feet) and the time (seconds) into the following equation:

Flow rate = (volume of the drive dial)/(Time for one revolution of drive dial in seconds) x 3600. This will give the rate of the gas flowing through the meter in cubic feet per hour.

Example: # 1

What is the flow rate of the one foot drive dial in the image above if it takes 45 seconds to make one complete revolution?

Flow rate =

1 cubic foot/45 seconds x 3600 seconds/hour = 80 cubic feet per hour

Meters operating at elevated pressures

If the meter is operating at 1 PSIG or above, then the flow rate determined in the steps to the left must be multiplied by the pressure factor to determine the flow rate in standard cubic feet per hour.

The pressure factor = (Inlet gage pressure + atmospheric pressure / Base pressure

Note: All values must be in PSI units

Example: # 2

What is the flow rate in SCFH if the meter in Example #1 is located in Omaha, NE and is operating @ 2 PSIG?

Given that an atmospheric pressure of 14.16 PSIA and the Base Pressure of 14.73 PSIA are the recognized standards for Omaha, NE.

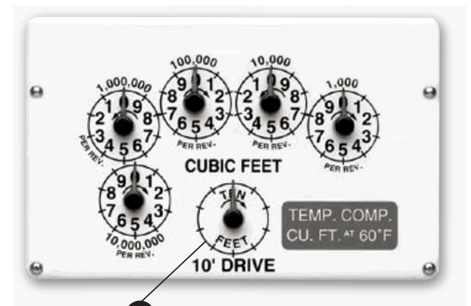The pressure factor for these conditions is:

(2 PSIG + 14.16 PSIA)/(14.73 PSIA) = 16.16 PSIA/14.73 PSIA = 1.097

This means that for each cubic foot of gas measured by the meter at 2 PSIG, the customer will be burning 1.097 cubic foot at the burner tip.

Using the flow rate of 80 Actual Cubic Feet per Hour (ACFH) going through the meter, when multiplied
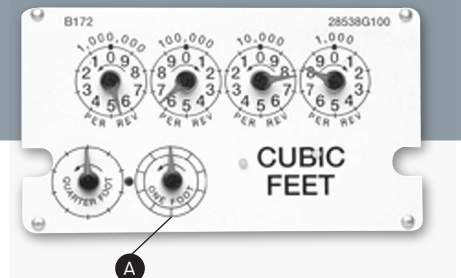
Commercial/Industrial

by the pressure factor for 2 PSIG inlet pressure results in a flow rate of 87.77 SCFH.

80 ACFH x 1.097 = 87.77 SCFH

elster
American Meter

About Elster Group

A world leader in advanced metering infrastructure, integrated metering, and utilization solutions to the gas, electricity and water industries. Elster's metering and system solutions reflect over 170 years of knowledge and experience in measuring precious resources and energy.

Elster provides solutions and advanced technologies to help utilities more easily, efficiently and reliably obtain and use advanced metering intelligence to improve customer service, enhance operational efficiency, and increase revenues. Elster's AMI solutions enable utilities to cost-effectively generate, deliver, manage, and conserve the life-essential resources of gas, electricity, and water.

Elster has a staff of over 7,500 serving customers globally in North America, Central America, South America, Europe, Asia, Africa and the Middle East.

EAM-OM0001-EN-P - February 2009