

energy measures

fact file

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ADDITIONAL INFORMATION: Getting Started**Why regular meter reading is important.**

Regular meter reading is absolutely essential to energy management and should be designated to either the general manager or maintenance manager on a regular basis (ideally weekly, but smaller hotels may select to read meters monthly). Regular meter readings will help you to:

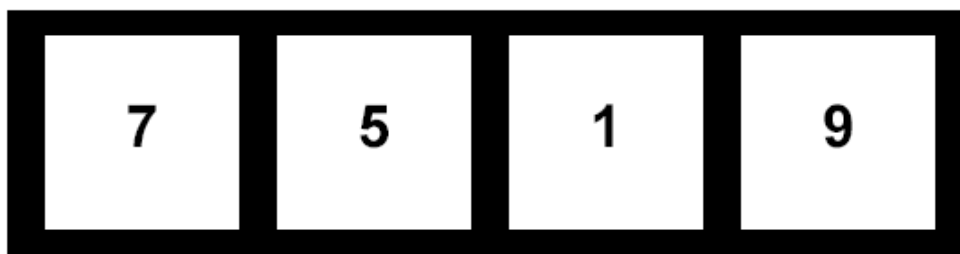
- Identify unusual increases in consumption illustrating potentially malfunctioning equipment or a billing error
- Identify unusual changes in energy charges that are not matched by changes in consumption illustrating a billing error
- Identify changes in consumption in particular parts of the property illustrating the need for staff training or malfunctioning equipment
- Identify excessive loads illustrating a need for new investment.

Results of meter readings should be recorded on a chart and reviewed quarterly to build a picture of seasonal consumption. This will allow immediate identification of increases in energy consumption. Hotels that are members of larger groups often already contract consultants or have an in-house system for meter reading. General managers should be aware of the results of these readings so they can implement relevant energy saving measures.

Smaller hotels or hotel groups may not have a systematic process for reading energy meters. These hotels may wish to use a log sheet to record meter readings. Standard log sheets are available and it is important that you use one log sheet to record consumption from each individual meter in your property for each quarter. For a property with 20 separate meters, therefore, 20 log sheets should be completed each week or month within that quarter.

How to read meters

There are two basic types of meter, digital and dial. Digital meters are easy to read, you simply record the numbers as they appear in the frames, from left to right. Below is an example of a digital register:



The reading is of course 7519. The 1 and 9 may have partially moved out of their frames and the 2 and 0 started to replace them. In this instance, you should judge which is the closest reading.

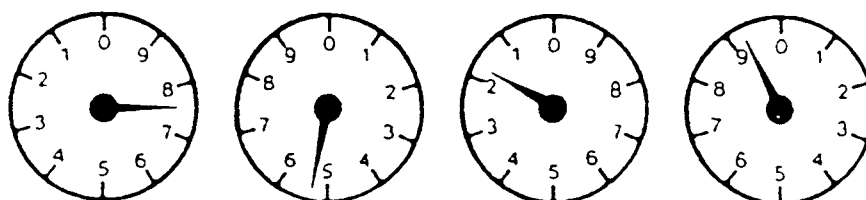
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Dial meters are less easy to read. Below is an example of a dial register:



Note that the numbers on each dial go from 0 to 9 clockwise and anti clockwise alternatively. You should always:

- Read the dials from left to right
- When the pointer is between two figures, write down the lowest figure (even if the pointer is nearest to the larger one)
- When the pointer is directly over a figure look at the next dial on the right. If the next dial reads 9, subtract one from the first dial. If the next dial is not a 9, write down the number the pointer is over. For example, if the pointer is directly over 4, write down 3 if the next pointer is 9 and 4 if the next pointer is not 9.

Thus the reading for the dials above is 7519.

Reading electricity meters

These are the most complicated meters to read and your property may have one or multiple meters. The measurement by most meters is in kilowatt hours (kWh). Most hotels buy electricity at two rates – a normal or day rate and a low or night rate. If you use electricity at these rates, you need to add together the readings from both meters to calculate total electricity consumption in kWh.

Larger properties will also be on a maximum demand tariff, whereby there is an additional charge made based on the highest consumption you have had over any 30 minute period. If your hotel has a maximum demand tariff, you will also need to collect this figure (make sure it is calculated in kWh, not KV).

Some meters do not calculate kWh directly, but the results have to be multiplied by another factor – this is known as the meter factor and is usually 10 or 100, but is sometimes 5.95. The meter factor will be attached to the electricity board near the meter and should always be noted to calculate total electricity consumption in kWh.

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Reading gas meters

Gas meters may be digital or dial and are relatively simple to read because they record consumption with no reference to low or normal demand. Gas may be metered in kWh or cubic feet. In the latter instance, you will need to convert the reading to kilowatt hours to assess total energy consumption. To convert other units into kilowatt hours:

- Multiply therms (BTU) by 29.28
- Multiply cubic feet by 0.97
- Multiply cubic metres by 10.5.

Once you have collated figures, you will be able to use HEAT on-line to assess how the energy consumption in your property compares to other similar establishments.

Adapted from Forte, J : Energy Monitoring and Targeting for Hotel Groups.