



DAE Instrument



# Limit 2/20 User's Manual

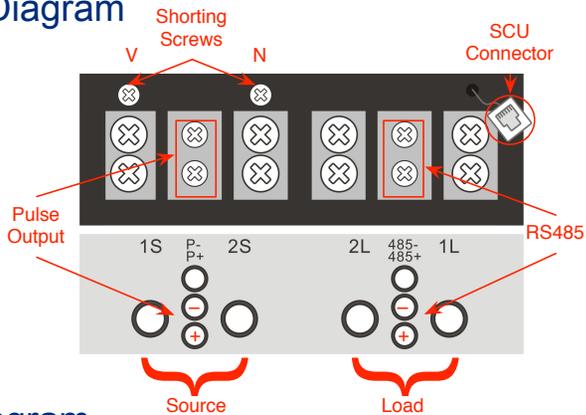
## Description

A regular energy meter operates by showing the accumulated energy consumption in kWh, the Limit 2/20 is different from regular energy meters by deducting the consumed energy from the allocated energy. In essence, the Limit 2/20 is like a countdown meter.

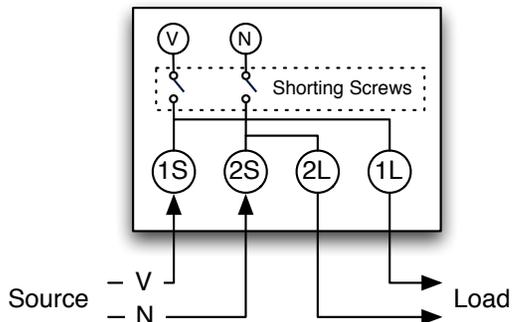
Since the Limit 2/20 was designed for use in remote villages where literacy is uncommon, the display does not use Arabic numerals. Instead the display is a representation of the total energy available, at the beginning of each allocation, it shows "888888", each "8" has 7 segments for a total of 42 segments. Each segment represents a proportion (about 2.38%) of the total Watthours available for use. As energy is consumed, segments are removed, until no segment is left indicating that all the allocated energy has been consumed. In this way, the consumer has a visual indicator of their energy consumption even if they cannot read numbers.

The Limit 2/20 can be set with various parameters for limiting the energy consumption using the MST-08. The MST-08 is connected to the Limit 2/20 using a regular phone cable through the phone jack inside the terminal covers.

## Terminal Diagram

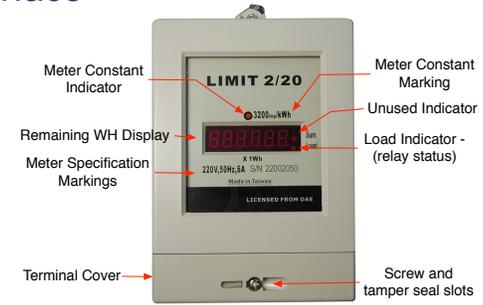


## Wiring Diagram



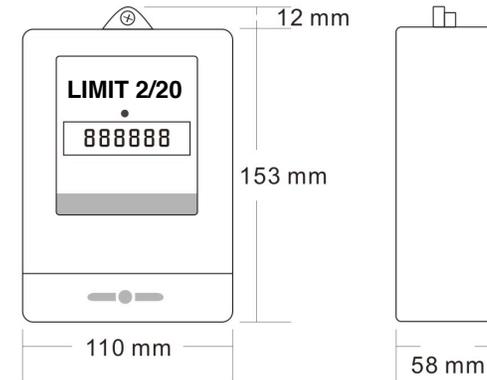
**Note:** Always make sure that shorting screws are tight when in normal use, shorting screws are loosened only during testing and calibration.

## Operator Interface

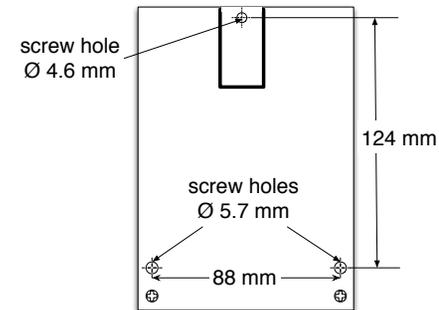


Meter Constant Indicator	flashes 3200 times for every kWh
Remaining WH Display	displays the remaining watthours
Reserved Indicator	used for different purposes for special meter types
Load Indicator	lit when power to the load is supplied
Terminal Cover	cover for terminal contacts with tamper seals
Meter Constant Marking	number of output pulses per kWh
Meter Specification Markings	shows the meter specifications

## Dimensions



## Mounting Holes



# Operation

The Limit 2/20 can be set with 4 parameters:

- 1. Current date and time (DT)
- 2. Maximum watt-hours allowable (MAX-WH)
- 3. Daily watt-hours allowance (DAILY-WH)
- 4. Daily starting time (START)

At the preset time (START) each day, the Limit 2/20 will be allocated the preset daily watt-hours allowance (DAILY-WH). When the Limit 2/20 has zero watt-hours left over from the previous day, the Limit 2/20 will display "000000" on the LED display.



But when there is left over watt-hours that was unused from the previous day, the display will instead show "888888".



The extra bar in the middle segment signifies the left over watt-hours. When the left over hours are consumed the display will become "000000".

When the display is showing "000000", each segment represents one-thirty sixth (6 x 6) of the total DAILY-WH. Each time 1/36 of the DAILY-WH is consumed one segment is removed, starting with the left most digit's upper left segment and going counter-clockwise until all segments are gone. Before one segment is removed, the remaining watt-hours will be momentarily be shown on the display. For example, if DAILY-WH is set to 36, then the figure below shows the display behavior at the moment one watt-hour is deducted.



When all the DAILY-WH is consumed, then the display will become blank and the power to the load will be cut off.

If there are left over watt-hours before the START of the next day, the left over amount is added to the DAILY-WH. The total that can be accumulated in this manner is up to the MAX-WH that has been preset for the Limit 2/20. For example, if the DAILY-WH for each day, and the MAX-WH is 100, then after three days, the total should be 108, but only 100 is allowed.

# Set Up

The Limit 2/20 can be set up using the MST-08 handheld setting tool available separately from the Limit 2/20.

