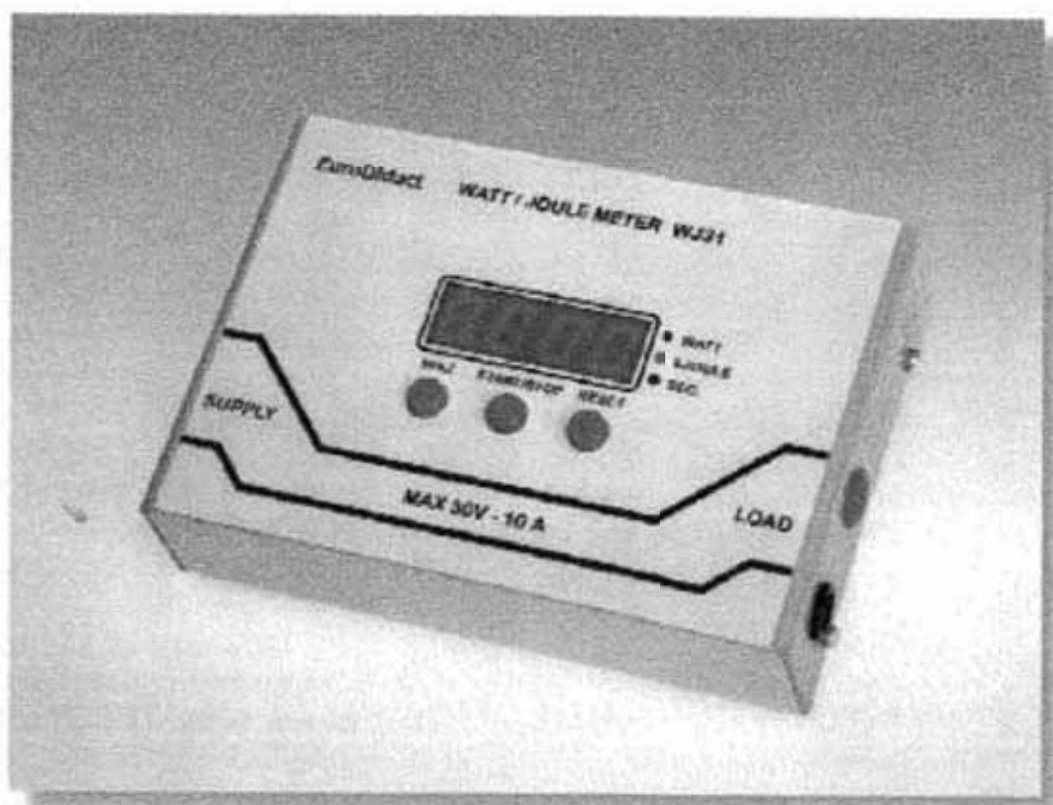


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Watt/Joule Meter



User Instructions

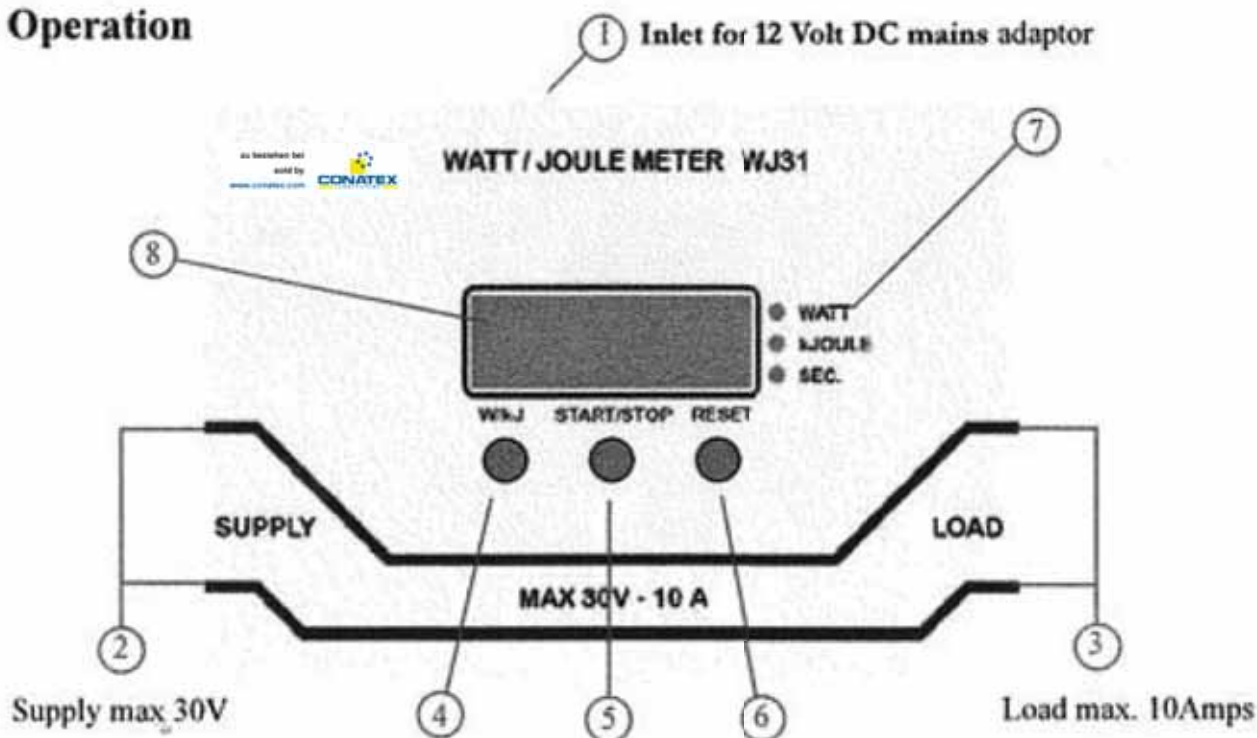
Overview

The Watt/Joule Meter is a microprocessor controlled instrument for measurement of power and energy. WJ31 measures Watt, Joule and keeps track of the Time in Seconds.

This instrument is ideal for students experiments with measuring accurate instantaneous power or cumulative electrical energy delivered to a load from a power supply.

All measurements are displayed on the large 4 digit LED display. The different functions are selected and controlled by means of three push buttons. The necessary mains adaptor is included.

Operation



1. Instrument power supply input from mains adaptor, 12 Vdc.
2. **IN:** Input bushings for connection of supply voltage. Max. 30 Volt.
(NOTE: Black bushing is connected to metal cabinet).
3. **OUT:** Output bushings for connection of load. Max. 10 Amp.
(NOTE: Black bushing is connected to metal cabinet).
4. **W/kJ** push-button for selection of power or energy measurement.
5. **START/STOP** push-button to start and stop of energy measurement.
If stopped, then shift display between energy [kJoule] and time [Sec.].
6. **RESET** push-button to reset (clear) the energy and time memory.
7. LED's for indication of the function selected:
WATT Measurement of power (displayed in Watt)
kJOULE Measurement of energy (displayed in kJoule)
SEC. Display of the time of the energy measurement.
8. 4 digit LED display.

Instructions for use

Immediately on power-on the instrument displays the version number for approx. 2 seconds. The instrument is now ready for use.

If no voltage is supplied to the IN-bushings, or the voltage is below 0.5 V, the message 'Lo U' appears on the display.

Select the function by pushing the **W/kJ**-button.

Watt:

Function for measurement of power [**Watt**].

The instrument starts automatically in this function.

The display shows the power in Watt.

Joule:

Function for measurement of energy [**kJoule**]

Press the **W/kJ**-button once. The instrument shifts to display of energy in kJoule.

Press again, and the instrument returns to display of power in Watt.

The energy measurement is started by pushing the **START/STOP**-button. The display light is reduced.

Measurement is stopped by another push on the **START/STOP**-button. The display returns to full light. The measurement can not be re-started (continued).

During the energy measurement it is possible to change the display reading between Watt and kJoule, without disturbing the energy measurement running.

When the energy measurement has been stopped, it is possible to change the display reading between energy [**kJoule**] and time [**SEC.**] by pushing the **START/STOP**-button. When time is displayed, both LED's **kJOULE** and **SEC.** are lit.

Reset energy measurement:

First select energy measurement mode, by pushing the **W/kJ**-button if necessary.

Press the **RESET**-button, and the display shows 'Clr?'.

Another push on the **RESET**-button clears the energy measurement. The display reads '—' for approx. 2 secs.

(If the **RESET**-button is not pressed, - a time-out function returns automatically the instrument back to energy reading after approx. 2 seconds).

Technical Information



WARNING : Black bushings marked are connected to chassis !

Functions:	Watts, Joules and time in seconds
Measuring range:	
Voltage:	0,5 V to 30 V, DC or AC
Current:	0,2 A to 10 A, DC or AC
Overload protection:	electronic, 15 A continuous, 20 A short-term
Frequency range:	0 to 10 kHz
Active power:	0,1 W to 300 W
Resolution:	0,1 W
Accuracy:	+/- 2% +/- 1 Digit
Work:	0,001 kJ to 9999 kJ
Resolution:	0,001 kJ to 1 kJ
Accuracy:	+/- 2% +/- 1 Digit
Time:	0,5 s to 9999 s
Display:	4 digit LED (7 segments)
Digit height:	20 mm
Supply voltage:	12 V DC (300 mA)
Dimensions:	45x165x115 mm
Weight:	0.9 kg