TECHNICAL SPECIFICATIONS

Housing	.5052-H32 aluminum, .050" thick
Meters	50µA current draw each at full scale deflection
PCBA	fully custom, 2 layer copper, lead free average power draw of entire circuit, approx. 300µA
Power Source	AA alkaline battery, expected life approx. 1 year onboard boost regulator will discharge battery to .4v while ouputing a steady 2v to system
Main CPU	Atmel ATtiny 24/44/84 family, memory is burned at factory, lock fuse unset so tinker/hackers can program via ISP
Firmware	power efficient, fully interrupt driven code

ABOUT AWKWARD ENGINEER

Awkward Engineer started life as a humor blog that made approximately zero dollars. We made the decision to Do Something Different and to use our mechanical engineering background to start designing physical products.

We invested $500 and launched our first product, the Panic Button Light Switch Kit, with a whopping 3 sales, including one to mom and one to dad. Stubbornly refusing to sit on inventory, we cold called our way into a key large retailer, and sold a few thousand units.

To make a long story short, we felt like we were on to something and threw ourselves into product development, learning more and getting better with each product. We now enjoy working on topics as varied as graphic design, microelectronics, mechanical design, embedded firmware, sales and marketing, and more!

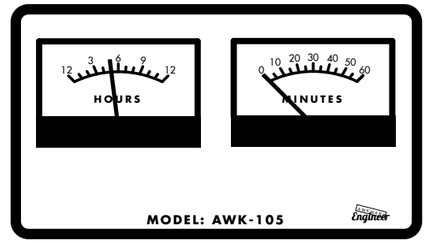
We have a blast designing this stuff and love sharing our work with you! Check out www.awkwardenginer.com to see more and to join our mailing list. Email questions, comments, or your pictures (we love pictures!) to questions@awkwardengineer.com

MODEL

AWK-105

"Analog Voltmeter Clock"

Made in the USA



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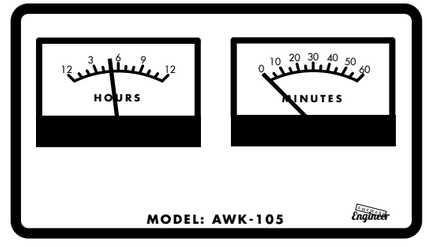

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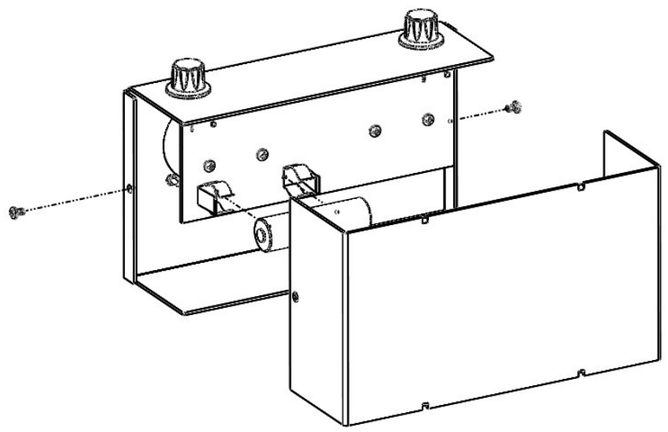
INSTALLING THE BATTERY

Remove the screws from both sides of the case and then remove the back cover. Install single AA battery in the direction indicated on the circuit board.



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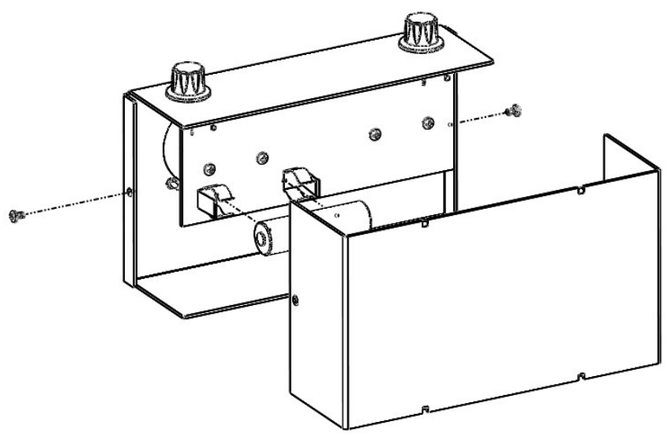

CLOCK OPERATIONS GUIDE

1st, start by calibrating the meters to achieve full scale deflection. If needed, the zero points can be adjusted with a screwdriver.

MODE	DESCRIPTION
CAL1	Turn the ADJUST knob until the hours meter points to 12. Minutes will be pointing to 0.
CAL2	Turn the ADJUST knob until the minutes meter points to 60. Hours will be pointing to 0.

2nd, point the MODE knob to TIME mode to set the time. (Defaults to 5:00 at intial powerup.)

TIME	Meters display full scale deflection for 2 seconds before displaying time. Then, turn the ADJUST knob to set the time. The minutes hand drives the hours hand, so **it may take several turns** to reach the correct time.
WARBLE	Meters display half scale deflection for 2 seconds, then the clock displays the time while the meters randomly twitch. The ADJUST knob is disabled in this mode.

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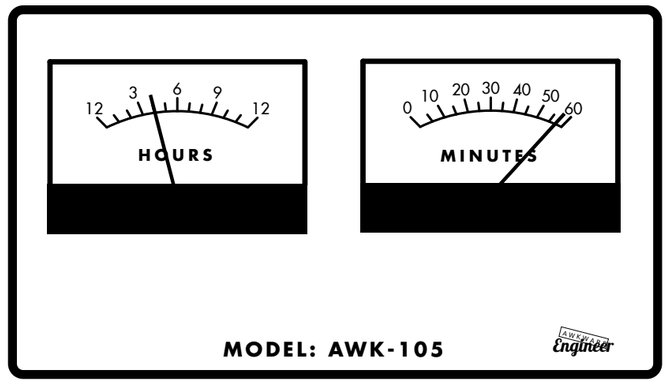
READING THE CLOCK

Read the time below as 4:57 (almost 5 o'clock somewhere.) The hours hand moves in whole hour increments.



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