Use Mooshimeter App to Perform Many Tasks

The latest beta version of the mooshimeter android app has the ability to send the meter reading values via broadcast intent messages. These values can be processed by any other app on the phone which has intent receiver capability. There is a global setting in the android app to turn this on. The global setting page is the same page used to set temperature readings to C or F. It is prior to connecting to the meter.   Here are some examples to show how this could be useful.

The intent receiver app used in these examples is Tasker by Crafty Apps EU, $3 to buy (from the google play store) https://play.google.com/store/apps/details?id=net.dinglisch.android.taskerm   This app allows you to set up multiple profiles, each to perform one or more tasks (sets of actions such as send an email) based on certain contexts (usually events in our case such as receiving a value > 0.5 volts from the mooshimeter).   Tasker is very powerful and can be complex, but you can do some very useful things fairly easily. If you use the same google account, you can install Tasker on all your android devices without additional costs.   There are other alternatives to Tasker, but it is very popular and well supported. Root is not required for the examples below.

Set up Tasker Preferences. Press the top three small vertical squares in upper right corner of Tasker > Preferences > Under UI, remove Beginner mode   >   Under Misc, check Allow External Access.

Example 1:   Display a popup message every time a broadcast intent is received from the mooshimeter from channel 1
In the Tasker app:
Make sure PROFILES is selected   > + > Event > System > Intent Received > Action: com.mooshim.mooshimeter.SAMPLE_INTENT   >   press top left back arrow >   New Task + > New Task Name: Popup1 > + > Alert > Popup > Text: Received %value %units   > Timeout (seconds)   2   >   press top left back arrow twice to get back to main Tasker page then android back to android display.

Taker cannot run in the background. If the mooshimeter app display is active and intent turned on, you should see repetitive meter value pop ups.

Well, that shows it is working correctly, but not too useful. Let's try another example.

Example 2A: Tasker announces when the resistance is an open circuit on channel 1

In the Tasker app, set up a second Profile:
PROFILES selected > + > Event > System >   Intent Received   > Action:
com.mooshim.mooshimeter. SAMPLE _INTENT   >   press top left back arrow   >   New Task +
> New Task Name: Speak1 > + > Alert > Say > Text: open circuit   > Engine: Voice:
Google Text-to-speech Engine   >   Stream: Notification >   If %value Maths Greater Than
1E9 >   press top left back arrow twice to get back to main Tasker page then android back to
android display.

The broadcast values been converted to base units. For example, a reading of 5.13mV is sent as
0.00513 or 5.13E-3.   8.245Kohm is sent as 8245.   Tasker works just fine with conditionals that
include the E.

Taker cannot run in the background. If the mooshimeter app display is active, set to resistance,
intent turned on, and the probes are open, you should hear the announcements. Make sure
the phone notification volume is set correctly. If speaking does not work, android settings >
Language and Input > Text-to-speech options   pick one for your phone.

Example 2B: Tasker announces 1% resistance pass
If you are doing quality control, you might want to know if the resistance (or voltage, current,
etc because the value to Tasker is unitless) is within spec for several pieces.   So let's change the
example above to test a 4.7K 5% resistor.
Go back and edit the TASKS called Speak1 > Text: Passed > If %value Maths Greater Than
4465 > + > And   %value Maths Less Than 4935 >   press top left back arrow twice to get back
to main Tasker page then android back to android display.

Example 3: Tasker send an email on high voltage on channel 1

This example on high voltage is probably better used on Channel 2, but until that is available,
we can test it on CH1.
To send an email, we need to install another app which is a Tasker plugin, called MailTask by
Marco Stornelli   https://play.google.com/store/apps/details?id=com.balda.mailtask   This

app is free, but has limitations unless you buy. However, you can run this example to see how it works for free.

We could set up a third Profile, but let's just add a second Action to the Speak1 Task

Click on TASKS > Speak1 to edit > + > Plugin > MailTask > Configuration > To: receivingEmailAddress > subject se1 > body Tes1 > check mark > If %value Maths Greater Than 0.5 >   press top left back arrow twice to get back to main Tasker page then android back to android display.

If the mooshimeter app is running, set to aux DCV on Channel1, intent turned on, and you probe a AA battery with a resistor divider to cut the voltage in half, you should get an email with subject se1 and Tes1 in the body.   This can be very useful, but you could get in a situation of getting an email every second if you are not careful.   Try this: Make sure PROFILES is selected >   long press Speak1 until top menu changes > press the three horizontal sliders > play with Cooldown Time or Limit Repeats until you get what you want. > press top left back arrow to get back to main Tasker page then android back to android display.

To send email, the phone must have a email setup. This was tested with gmail. A nice thing about MailTask plugin is you do not have to enter the sending email address or password. It uses the android system primary email.

Example 4: Tasker write log file on phone

Maybe you want to log measurements to the phone to avoid putting a SD card in the meter. So set the meter to measure internal temperature or resistance or whatever you want.

Create a new Tasker Profile or add to an existing one. Create a new Task.

+ > File > Write File > File moosh1.txt > Text %DATE %TIME %TIMEMS %value %units >   Append check the box > press top left back arrow enough times to get back to main Tasker page then android back to android display.

On my phone, I found the file in /Device/SDcard. I use the free ES File Explorer app from the PlayStore. This is where I discovered that CH2 values show up occasionally. You can set the

two channels to different units and then use the Tasker filter on units to record only CH1. Also, %DATE %TIME %TIMEMS are three predefined Tasker variables; there are others. Google is your friend.

That is enough examples to get you started. Top row, we used PROFILES and TASKS. If you want to perform an action which includes the display, then you need to learn about SCENES. And VARS gets more into programming (variables).

Some details on how this works.
The mooshimeter app repetitively sends out two key:value pairs at 500 to 900 mS intervals. The keys are "value", "units" and the values are meter readings and units for the channel.

com.mooshim.mooshimeter.SAMPLE_INTENT is the specific broadcast intent from the mooshimeter. There may be many intents sent by other apps on the phone and this acts as a first level filter for the receiver.

The broadcast intents are internal to a single phone; the intents are not broadcast outside of the phone.

For now, the broadcast intents are only sent out when the app display is active. The broadcast stops when the app in running in the background. Broadcast will resume when the app is returned to the foreground (if the global setting is/was set).

If you make changes in Tasker, go all the way back out of Tasker to an Android page in order for the changes to take effect.

If you want your phone display always on, even on battery, then go to settings > display > Sleep never. Note in Android 5, this feature has been removed, so install Stay Alive! by SyNetDev from the Play Store.