



M101

**MANUAL DATALOGGER
BLUETOOTH INTERFACE**

USER MANUAL

GENERAL INFORMATION

M101 is a datalogger with Bluetooth interface to use it with Android, smartphone or tablet.

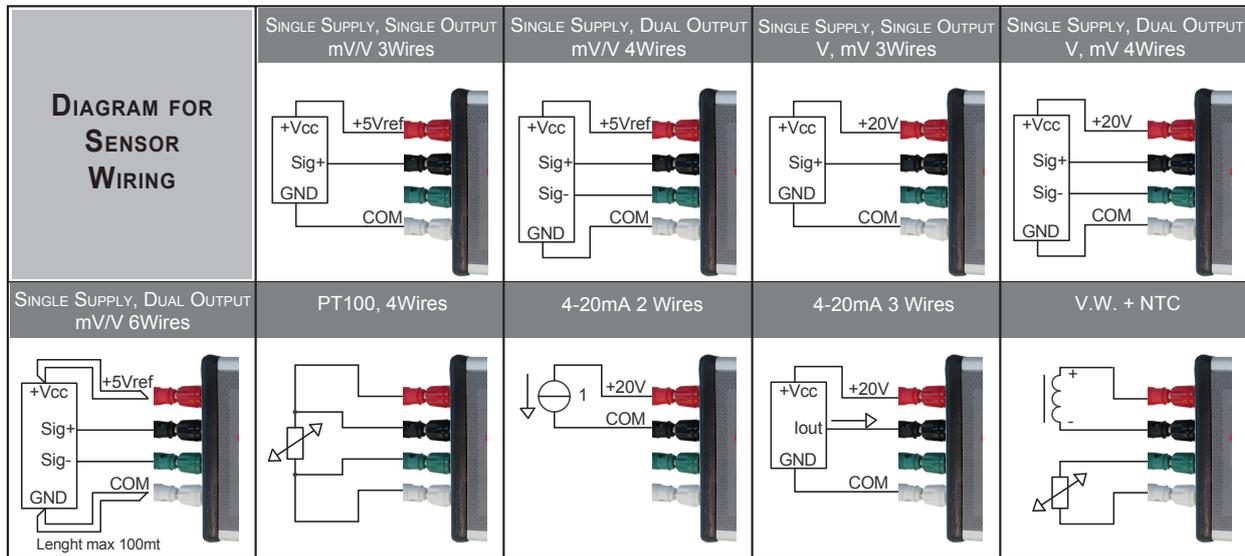
It is designed to make readings of geotechnical / environmental / structural instrumentation, both with analogue and digital output on the RS485 network.

The M101 App, supplied with the datalogger, allows to use the Android device to view and store the acquired data and to be able to share them through Android further. The connections (with color code for the different types of analog sensor as shown in the picture) and the digital connector make M101 simple and quick to use.

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SENSOR CONNECTIONS



1. SWITCHING ON AND OFF M101

M101 is equipped with an ON/OFF power button (1).

Press once to switch on the device.

After pressing the button, the led on the right (3) flashes briefly, indicating the battery level.

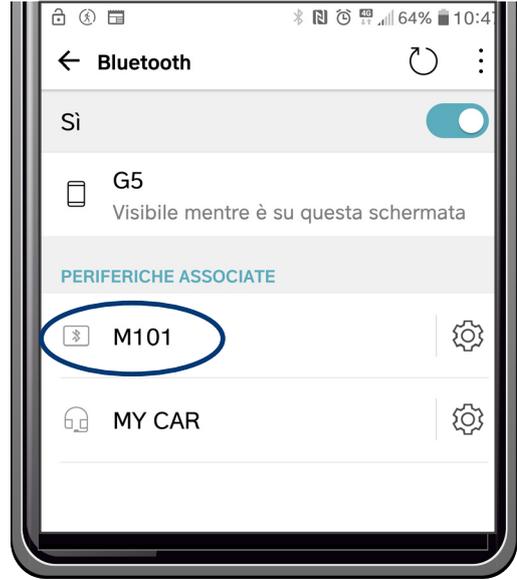
The LED has three colors depending on the battery level (green, yellow and red). If the M101 datalogger is not used for 30 minutes, it switches off automatically to save the battery. To switch off the device, keep the ON / OFF button pressed for a few seconds, M101 switches off and emits a short audible signal. Connect the sensor or sensors to M101 respecting the color of the jumpers and, clicking on the icon, enter the APP on your device.



- 1 Switching ON and OFF
- 2 ON/OFF indicator and readings. Blue led
- 3 Battery level indicator. Yellow/red/green led

2. BLUETOOTH ACTIVATION

To activate the Bluetooth of your smart phone or tablet, hereinafter referred to as “DEVICE”, press “Search for Bluetooth device”, usually you need to wait a few seconds. Once the M101 device is recognized, select the button and click on the “Pairing” button. The device may require an access PIN based on the version of Android you have. In this case, enter the PIN code: 1234. To prevent the device from repeating the same request, press the “Add a Trusted Devices” button. The executable file must be installed on your device.



Click on the APP icon, a message will immediately appear indicating: “This APK file may have unsafe content”, press on OPEN.

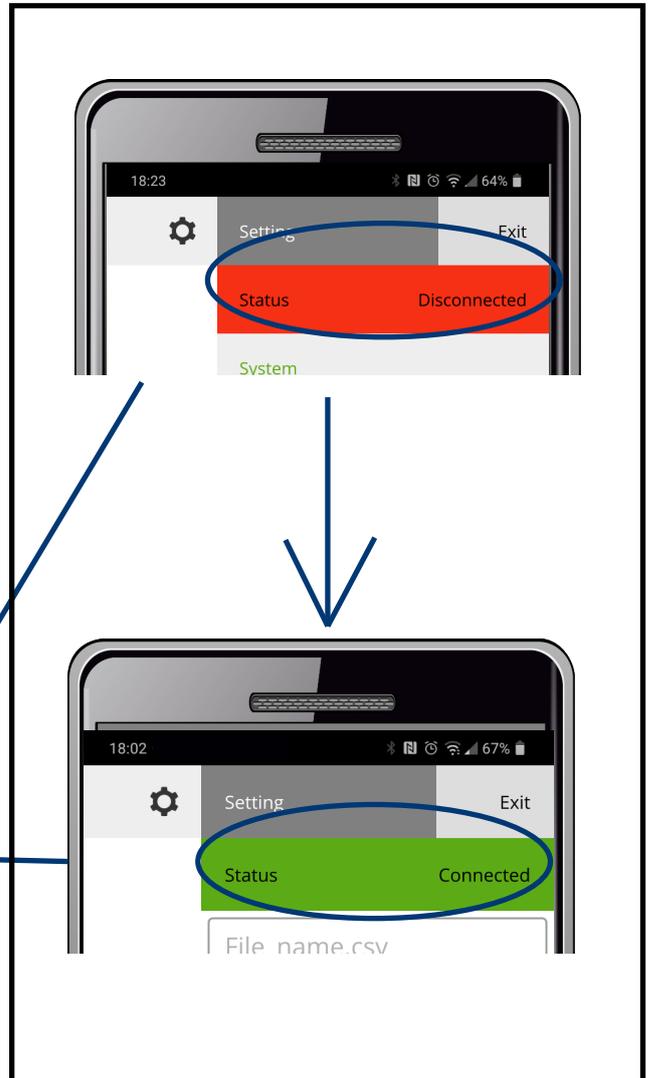
A second message “Do you want to install this application?” will appear. Click “Install”. Click on the icon of the APP to enter.



The APP opening screen is shown below. The sequence of menu will appear at the top



The two buttons, highlighted in red, indicate that the APP is disconnected from the datalogger. To activate it, click on DISCONNECTED. The bar turns yellow and appears the word CONNECTED, this operation could also last a few tens of seconds, depending on the model and version of the phone used. Once the connection is made, the bar turns green as shown on the figure.



The Setting sub-menus appear immediately below:

System
Useful button to connect M101 quickly.

DMUX
Button to manage the DMUX.

Data Saving
Button to SAVE the data read in a .CSV file.

Exit
Button to EXIT the APP.

VW & NTC
Setting for the visualization of the readings of vibrating wire sensors. Set the display in Hz or Digit and the type of NTC used by the sensor.

Factors
Sensor calibration coefficients.

SETTING

System

ACTIVATION / DEACTIVATION OF TERMINATOR 120R. Function to be used to connect M101 very quickly. The 120Ohm terminator is enabled or disabled and/or it is possible to set the mac address of the Bluetooth module.

DMUX

Select the use of the **DMUX** and the related channel number on which the peripheral is wired.

VW & NTC

The unit of measurement for the readings of vibrating wire in Hz or Digit and the type of NTC thermistor used by the sensor is set and selected.

Factors

The calibration coefficients are set for channels A and B.

Data Saving

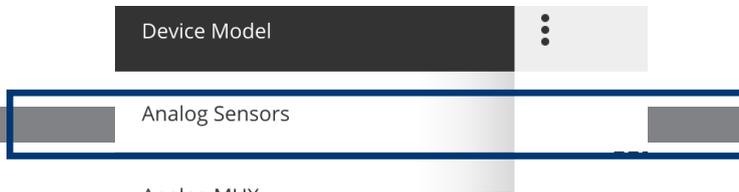
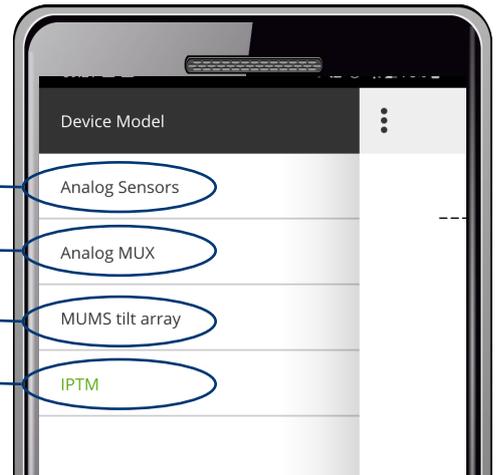
The data read is saved in .csv format .

DEVICE MODEL SETTINGS

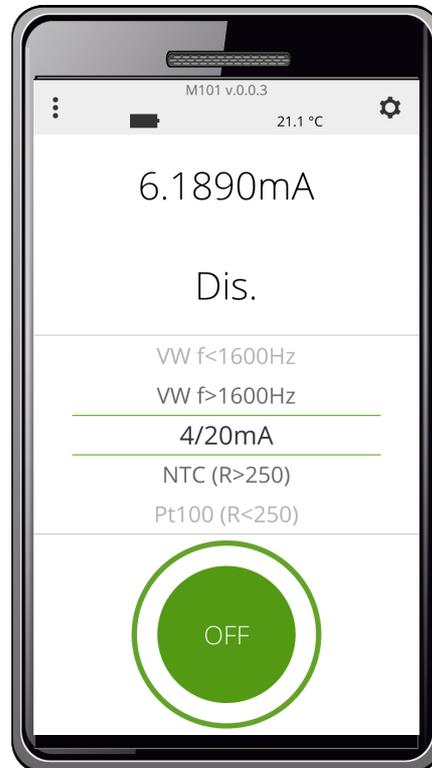
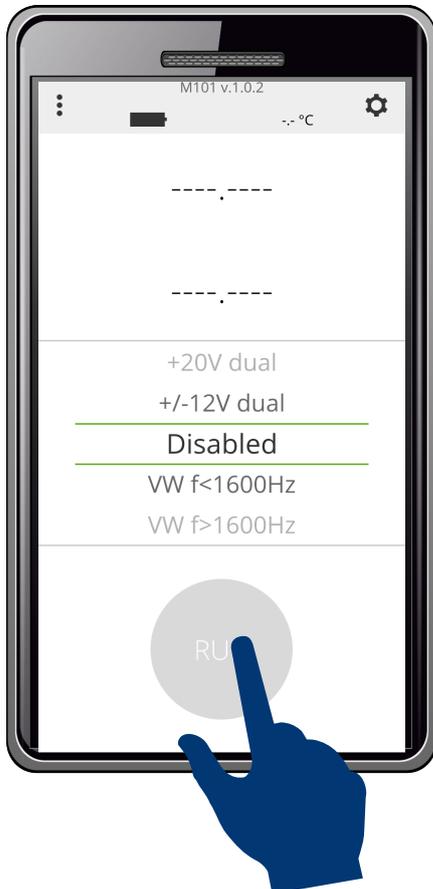


Clicking on the “wheel” symbol opens the sensor management menu.

- 1 = Analog Sensors (to read analog sensors)
- 2 = Analog MUX (to read GMUX)
- 3 = MUMS tilt array (to read the knots in the chain)
- 4 = IPTM (Setting of DSAS Digital sensor array)



After connecting the analog sensor to M101, using the special alligator cables, select the type of reading you want to do. Keep pressed the “RUN” button. After reading a screen will appear as shown in the example on the right.



Analog MUX

1	2	3	4
LogID	MuxID	CHnum	Wtime
9998	254	15	14
9999	00	16	15
00	01	Vbatt	01
01	02	1	02

Select the characteristics of the sensor you want to read.

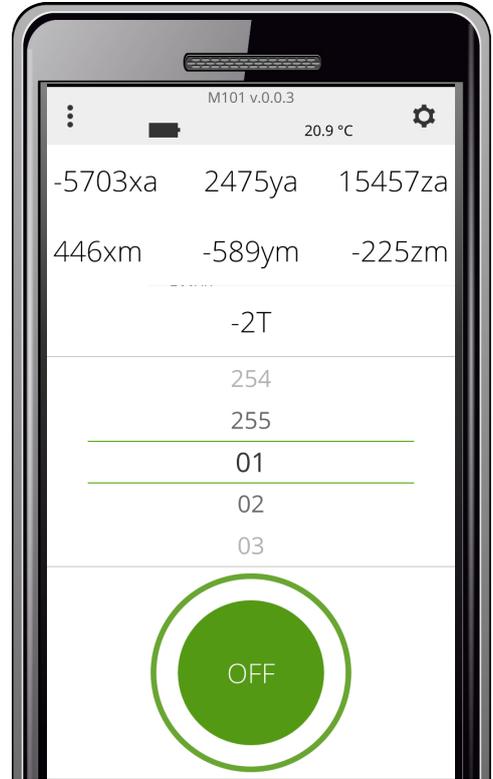
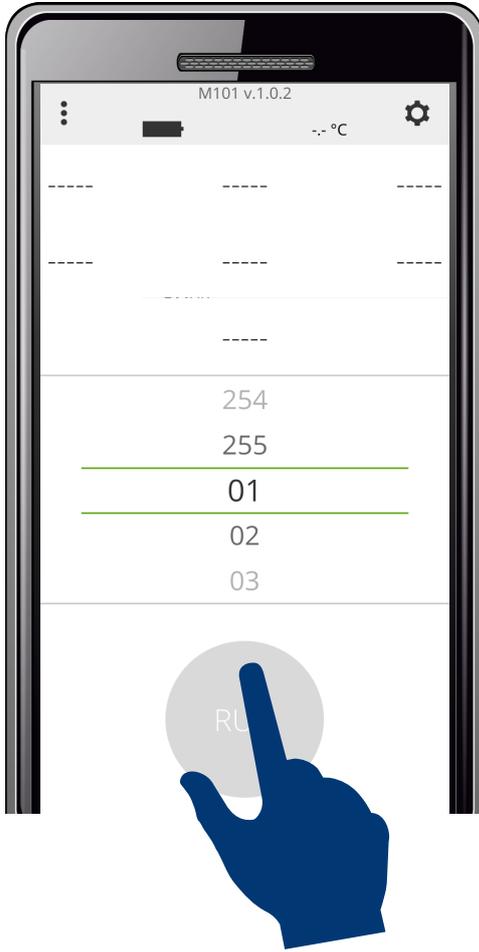
Keep pressed the "RUN" button, after reading a screen will appear, as shown in the example below.

- 1 = Identification LogID (ID of the logger G801 normally connected to the GMUX.)
- 2 = MuxID Identification number
- 3 = Identification of the channel number to be acquired
- 4 = sensor preheating time (That is, for how many seconds the sensor is powered before reading).

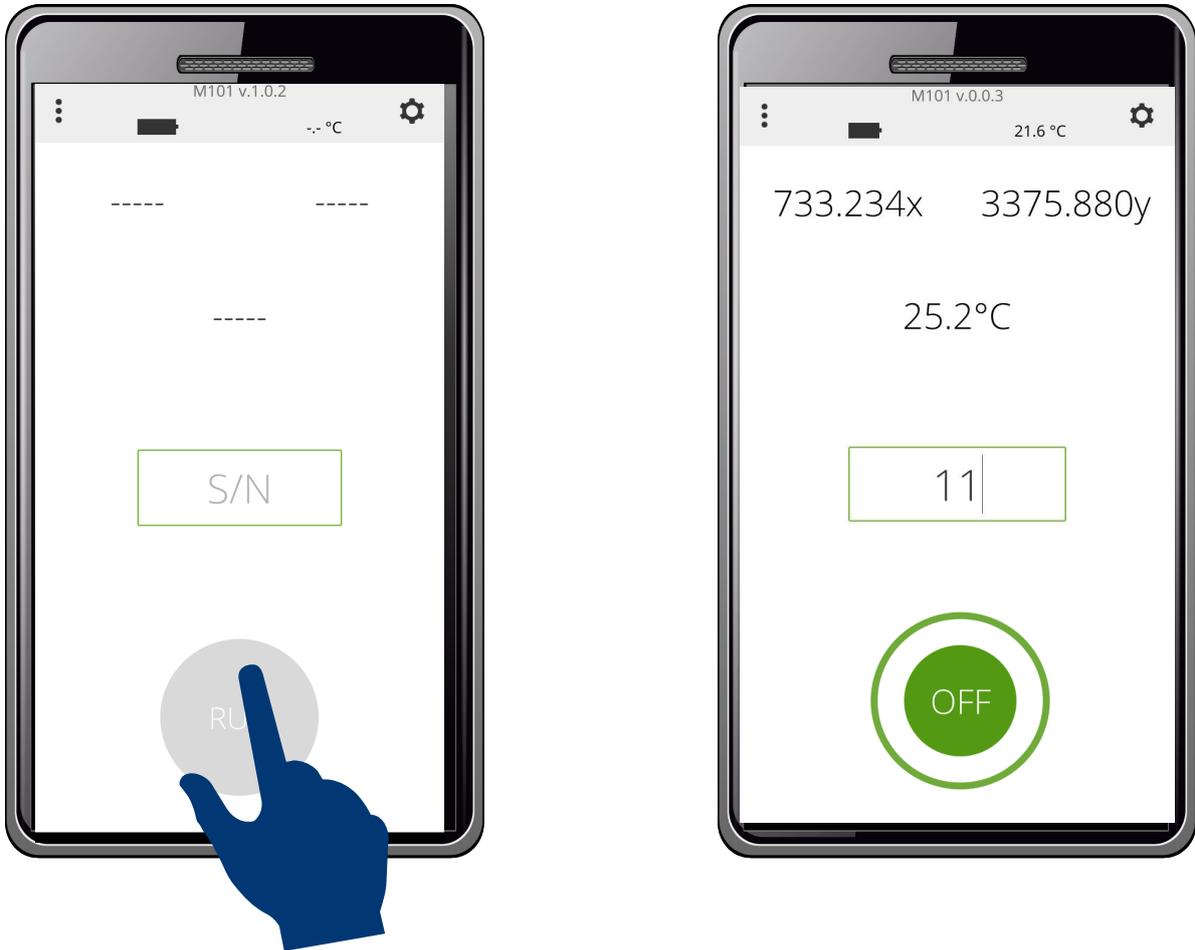


Select the node number you want to read.

Keep pressed the "RUN" button. After reading a screen will appear as shown in the example on the right.



Select and write the serial number of the DSAS device. Keep pressed the "RUN" button, after reading a screen will appear as shown in the example on the right.



TECHNICAL FEATURES

- System Requirements: Android 4.4.2 level API19 KitKat o superior.
- Automatic loading of calibration factors
- Signal inputs: VW (Hz), mA, V, mV / V, Pt100, NTC, VW, Digital (RS-485)
- Range:
 - VW Hz 400 / 5000
 - mA 4-20
 - V Single ended 0 / +10
 - V Differential -5 / +5
 - mV/V Singled ended 0 / +800
 - mV/V Differential -200 / +200
 - Pt100 Ω 15 / 400
 - NTC Ω 250 / 50,000
- Supply: Rechargeable internal battery Ni-Mh of 12Vdc
- Sensor supply: + 20V, + 12V, + 5V, 750uA, 50uA
- Assorbimento corrente max @ 12V: 100mA @ 4-20mA, without charge
- Measurement resolution: 24 bit, 0,1 Hz for VW
- Sensor connection: Analog (4mm socket), digital RS-485
- Temperature stability: + maximum 15ppm / °C
- Operating temperature: from -20° to +70°C
- Protection : IP65
- Dimensions: 150 x 105 x 35 mm
- Weight: 465 g

Dichiarazione di Conformità CE

The company Gei S.r.l., in the figure of the Head of the Technical Office, after checking the correspondence to the provisions of the following Community Directives,

2014/30/UE (Electromagnetic Compatibility)

2014/35/UE (Low Voltage)

2011/65/CE (RoHS)

and current harmonized standards, with related revisions

EN 61000-6-2, EN 61000-6-3

CEI EN 60204-1

States

that the M101 model product complies with the specifications imposed by the standards regarding the Electromagnetic Compatibility Directive, Low Voltage Directive and RoHS Directive.

Parma, 02/03/2020

Il Responsabile Ufficio Tecnico
Ing. Corrado Carini



GEI S.r.l. - 43123 Parma - ITALY
Via R. Koch 55/A - Pilastrello
C.F./P.I./Reg. imp. Parma 02161390345
Cap. Soc. Euro 20.000 i.v.

sales@geielettronica.it
www.geielettronica.it



Tel. +39 (0)521 642229
Fax +39 (0)521 030744