Veri**MAG**2 User Guide

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1. Introduction

1.1. Operating Principle

The VeriMAG2 is a device used to test and verificate the MAGX2 flowmeters in their whole scope of operation. The process can take place when the meter is installed as well as on uninstalled flowmeter.
The VeriMAG2 is to be wired in between of the sensor and transmitter to measure their status.

1.2. Safety Instructions

	Please read this manual carefully before using the product.

	Keep this manual for future reference. Arkon Flow Systems, s.r.o will not be liable for any damage caused by improper use of the product or its accessories.

	If the device is used any different way than is specified, the electric protection may be disrupted.

	The VeriMAG2 device must not be used in explosive hazardous areas.

1.3. Unpacking

❶ While unpacking the flowmeter, conduct a visual check of the instrument upon receipt to make sure the product has not been damaged during transport.
❷ Check the completeness of the package. In case of any problem, contact the Arkon sales department without delay.

o   VeriMAG2 device.
o   Three Cables to connect to the flowmeter.
o   Charger and USB cable.
o   Pen drive with SW + Manual.

2. Installation

2.1. Battery operation and charging

The instrument is equipped with in-built Li-Ion battery. The fully charged battery will stand more than 20 MAGX2 tests.
In order to charge the battery, connect the Charger to POWER/CHARGE slot in the VeriMAG2 top. The charging starts automatically.
The battery charger automatically disconnect when the battery is fully charged.
The charger might work as a power supply.

	Electrical installation should only be done by a qualified person. Standard safety regulations for hazardous electrical installations have to be respected.

2.2. Wiring

Cable 1 – Connector CON1 – Sensor simulation for transmitter
Cable 2 – Connector CON2 – Transmitter IOUT, Freq test
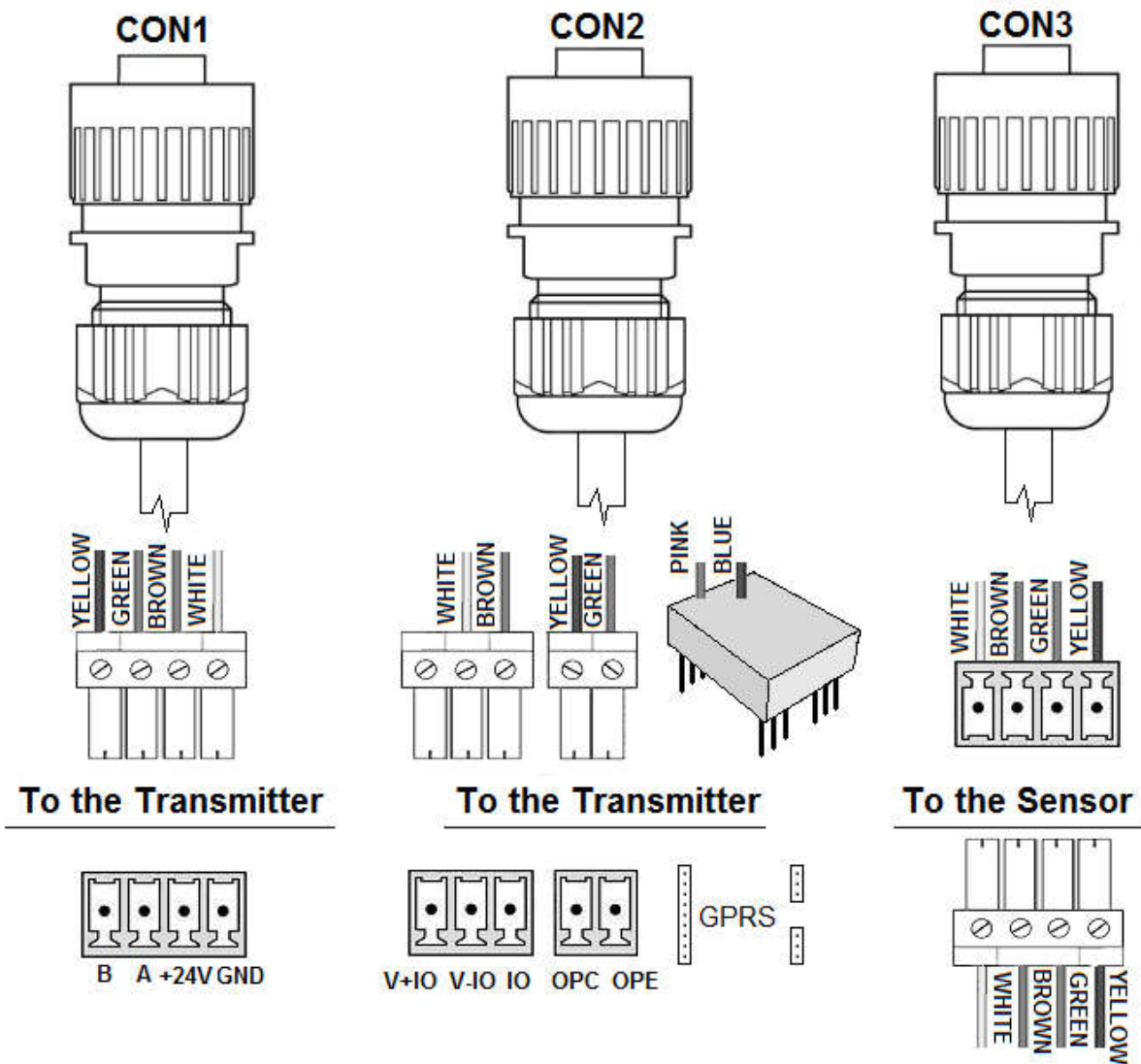Cable 3 – Connector CON3 – Sensor test

Step by step connection:
1 – Disconnect power to the flowmeter
2 – Open the transmitter, unmount all modules except IOUT and PULSE (if present in installation). Disconnect all cables going to site measurement.
3 – Disconnect sensor from the transmitter, connect the cable with number 3 to the sensor cable
4 – Connect the cable with number 1 to the transmitter in place of sensor cable.
5 – Connect the communication cable with number 2 to transmitter. Big connector in place of GPRS module, 3pin connector in place of IOUT output (IO - V-IO - V+IO), 2pin connector in place of Frequency output (OPC, OPE)*
6 – Switch on VeriMAG2
7 – Switch on power to the meter
8 – Run the Test – chapter 3.2
9 – After the test is finished reconnect all the cables to its previous connection.

*Note: connection of IOUT and Frequency output is not mandatory. Those are subject to test only in case they are present in MAGX2 flowmeter.

3. Tester menu

The following symbols are used in this manual and on the flowmeter display.

☑	ENTER	⟳↓	LEFT
⊠	Esc	↑	Selection menu
←	Back		
↺	DOWN		
⟳	RIGHT		
↻	UP		

Touch-buttons are working on capacitance principle therefore any conductive material close to button's area will cause button press.
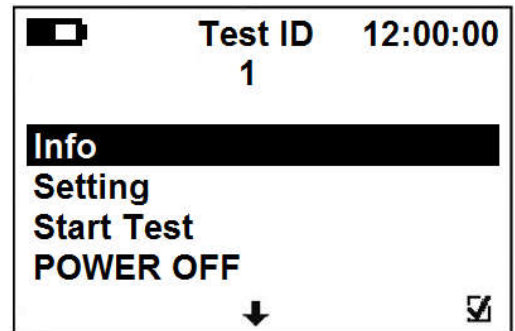
3.1. Main screen

Upon starting the device, you will automatically see the main screen of the menu.
Navigate with ↺↻ and select your choice with ☑.
Top left is VeriMAG2 internal battery indicator.
Next Test ID number is shown in top middle and time set in top right.

Info - information about the VeriMAG2 device

Setting - setting of Date, Time and backlight of the display

Start Test – see chapter 3.2

POWER OFF – power the device off, **to turn it on press any key for 5 seconds.**

Unit No. - unique serial number of the VeriMAG2 device.

Firmware - version of FW for the device.

Calibration Date - date of the last calibration of the device. **To keep traceability it is recommended to let the VeriMAG2 device calibrated once a year.**
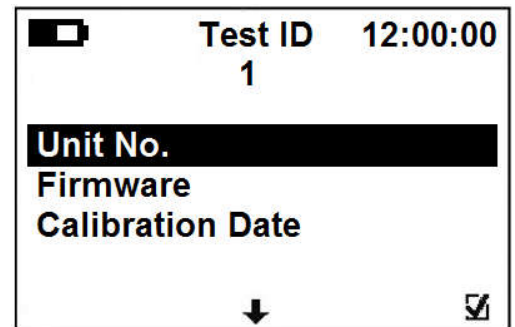
Date – set time that is used to backtrack test date

Time – set time that is used to backtrack test time

Backlight – switches VeriMAG2 backlight on and off

3.2. Start Test
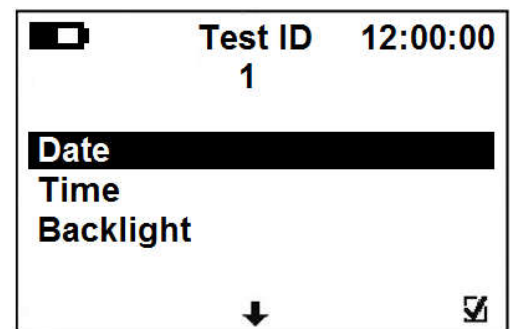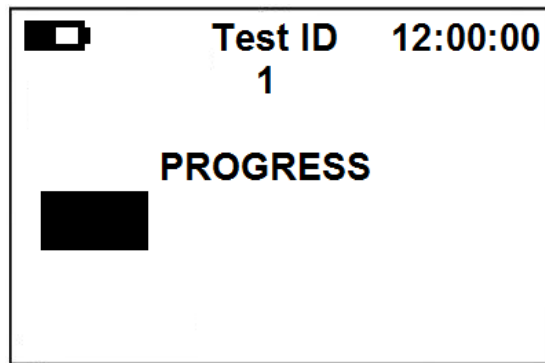
The device has to be fully connected to MAGX2 under test prior to entering the RUN TEST function. See chapter 2.2.

The test progress is shown on the screen.

Note the FW of MAGX2 that can be tested needs to be of 21.40 and higher.

If the test is not successful there is a list of error codes that might appear:

Unsupported
Magx2 Firmware - FW of MAGX2 under test is lower than 21.40
Sensor Firmware - FW of sensor communication module is lower than 30.03

Timeout
Magx2 Passwords - VeriMAG2 cannot communicate with MAGX2, all other tests are stopped, Test ID is not incremented
MagX2 Unit No. - error in communication with MAGX2
Magx2 Firmware - error in communication with MAGX2
Measurement - error in communication with MAGX2
Low Flow Cutoff - error in communication with MAGX2
Excitation - error in communication with MAGX2
Current Loop Setting - error in communication with MAGX2
Frequency Output Setting - error in communication with MAGX2
Flow Simulation Setting - error in communication with MAGX2

Sensor Unit No. - VeriMAG2 cannot communicate with Sensor communication module v8_5
Sensor Firmware - error in communication with Sensor communication module v8_5
Diameter - error in communication with Sensor communication module v8_5
Flow Qn - error in communication with Sensor communication module v8_5
Error Min - error in communication with Sensor communication module v8_5
OK Min - error in communication with Sensor communication module v8_5
Error Code - error in communication with Sensor communication module v8_5
Totalizers - error in communication with Sensor communication module v8_5
Calibration - error in communication with Sensor communication module v8_5

Frequency - error in reading frequency output*

Output Current - error in reading current output*

*Note: Can happen also when the modules are not present.

3.3. After the test
Make sure to put MAGX2 back to its previous state. Replug all the connections, tighten all screws.

VeriMAG2 software

The VeriMAG2 software is used to read out the previously saved MAGX2 flowmeter tests. The SW has its own internal database. Each previously saved test is possible to print any time.

3.4. SW Installation

The SW can be found on the pen drive delivered with the device or downloaded from www.arkon.co.uk/support.
To install the SW double right click on setup.exe and select option Run as Administrator and follow instructions.

Connect the VeriMAG2 device to your computer via USB port and install driver – in case it is not installed automatically you can find the driver in the installation folder – default in:
Program Files\Arkon Flow Systems\VeriMAG2

3.5. Connecting to VeriMAG2

Connect the device to your computer and start by clicking to Refresh COM ports button to find the COM ports available. Mind the connected device has to be in a range of **COM1-COM7** – you can check/change this setting in a device manager under COM and LPT ports settings.

Select the COM port the device is connected to and press Connect button. After successful connection you can see number of records loaded in the device. By clicking on Read from VeriMAG2 you can download them into SW internal database. After successful readout the data in the instrument are deleted and remain in the internal SW database.
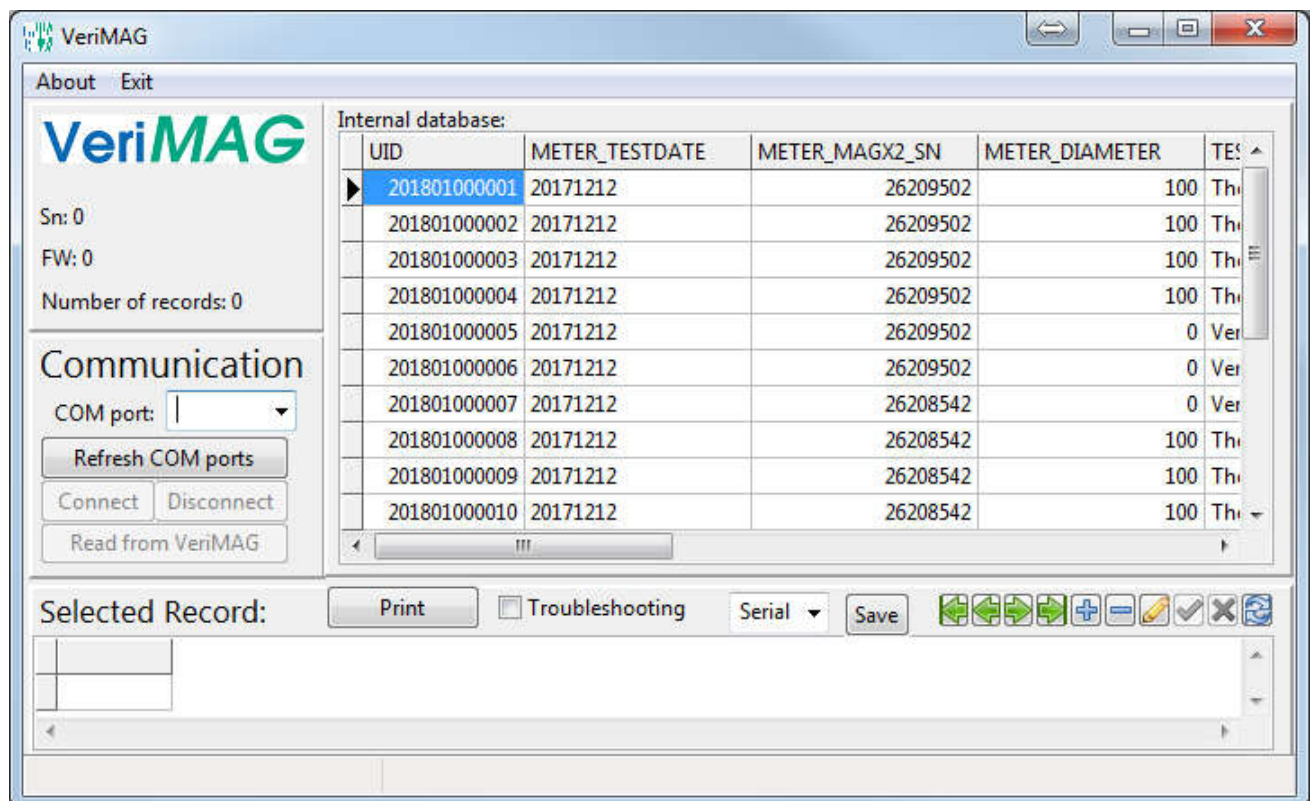
3.6. Printing from SW

Select the verification report you want to print in the internal database – you can see it in the Selected Record area and press Print button. A new window will appear allowing you to check the print out and select the printer. The report can be printed anytime later from the internal database.

Flowmeter Verification Certificate

arkon flow systems

Certificate Nr: 201801000009
Test Date: 20171212

Arkon Flow Systems, s.r.o.
Berkova 534/92, Brno 612 00
Workshop:
Nováčkova 11, Brno 614 00
Czech Republic
Tel: +420 543 21 48 22
Fax: +420 543 21 52 49
e-mail :office@arkon.co.uk

Meter:

Type: MAGX2
Transmitter Serial Number: 26208542
Transmitter FW: 21.40
Sensor Serial Number: 37301561
Sensor FW: 30.03
Error Minutes: 1952
OK Minutes: 1171
Error Code: 00000000

Meter Settings:
Diameter: 100mm
Flow Qn: 14,464m3/h

Calibration Data:
CP1: 0m3/h, CD1: 0
CP2: 0,1m3/h, CD2: 100000
CP3: 0m3/h, CD3: 0

Totalizers:
Total: 1081,64611816406m3
Total+: 7,89765310287476m3
Total-: 4294,96630859375m3
Auxiliary: 8,09078216552734m3

Verificator:

Serial Number: 201801
Calibration valid: 20180124

Test Results:

Certificate Nr: 201801000009
Test Date: 20171212

Error Code Test: Pass

Test Flows:
Flow1: 1m3/h
Flow2: 5m3/h
Flow3: 9m3/h

Output Frequencies:
Freq1: 100Hz
Freq2: 498Hz
Freq3: 888Hz

Output Frequency Test: Pass

Output Currents:
Current1: 5,636mA
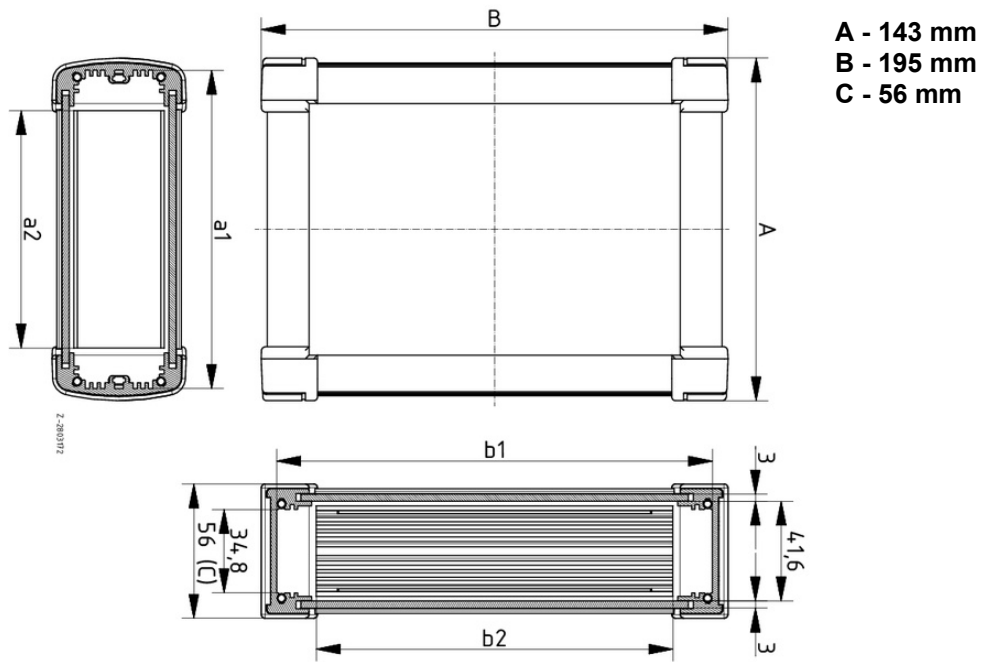Current2: 12,077mA
Current3: 18,478mA

Output Current Test: Pass

The electromagnetic flowmeter is measuring within +-1% of the factory calibration values.
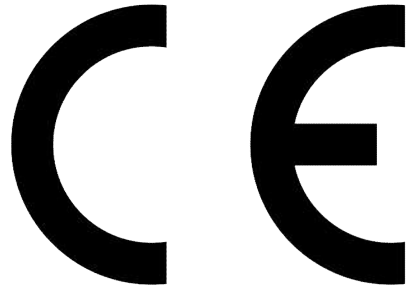
25.1.2018

Technician: ....

4. Meter Dimensions

A - 143 mm
B - 195 mm
C - 56 mm

5. Appendix

5.1. CE requirements

The VeriMAG2 verificator is manufactured conform CE requirements.

5.2. Warranty

The warranty conditions are covered by Arkon Flow Systems, s.r.o. Terms & Conditions of Sale and by Arkon Flow Systems, s.r.o Return Regulations and Warranty Conditions. The Arkon Flow Systems, s.r.o Terms & Conditions of Sale and the Arkon Flow Systems, s.r.o Return Regulations and Warranty Conditions are an integral part of the Resellers contract and of any Order Confirmation. Please see your Resellers contract or www.arkon.co.uk; Support section. The Warranty sheet is part of the Packing note of any new goods sent. For the claim or return procedure, please consult our web site www.arkon.co.uk or call the Arkon Flow Systems, s.r.o sales office.

5.3. Contact

Technical support: support@arkon.co.uk
Windows life messenger: support@arkon.co.uk

Sales office: office@arkon.co.uk

Office hours:
8:30 – 18:00 (GMT+1)

Direct technical support:
8:00 – 17:00 (GMT+1)