arkon
flow systems

Company products presentation

Arkon Flow Systems, s.r.o.
Nováčkova 11, Brno 614 00, Czech Republic
Tel: +420 543 214 822 Tel/Fax: +420 543 215 249
E-mail: **arkon@arkon.co.uk**
Web: **www.arkon.co.uk**

Arkon flowmeters presentation

PRODUCT RANGE

I. Electromagnetic flowmeters

1. MAGX2

- 1.1 Features
- 1.2 Operation
- 1.3 Modular design's advantages
- 1.4 Transmitter and modules
- 1.5 Sensor options
- 1.6 MAGX2 FAB

2. MAGB2

- 2.1 Features
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- 2.3 Sensor options
- 2.4 Measuring Instruments Directive (MID)

3. MAGE1

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4. MAGS1

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5. VeriMAG1

6. VeriMAG2

7. AGRIMAG/AGRIMAGP/AGRIMAGP2

- 7.1 Features
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8. Mounting system, Modbus RTU and Calibration

- 9.1 Mounting System
- 9.2 Modbus RTU
- 9.3 Calibration

Arkon flowmeters presentation

II. Ultrasonic flow and level meters

1. MHU lever meter
2. MQU flowmeter

III. Flumes

IV. Flow indicators

V. Ultrasonic clamp-on

VI. Telemetry software

MAIN PROJECTS AND INSTALLATION REFERENCES

MARKETS AND APPLICATIONS

CERTIFICATES

Product range

I. Electromagnetic flowmeters

MAGX2

MAGB2

Reduced-bore body version

MAGE1

MAGS1

AGRIMAG

II. Ultrasonic flow and level meters

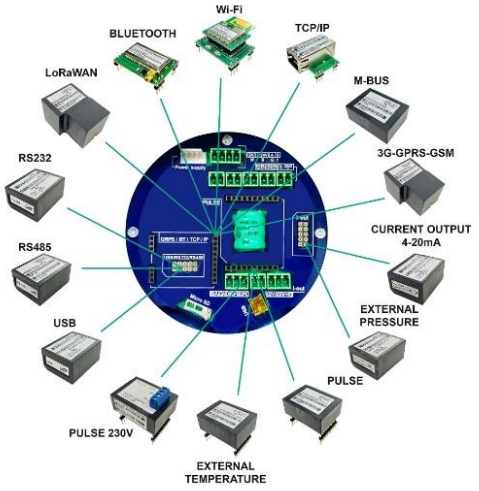
III. Flumes

IV. Flow indicators

I. Electromagnetic Flowmeters

1. MAGX2

The **MAGX2** follows Arkon's innovative modular design "**Plug and Play**"; it is a fit-all, **flexible, low-cost** meter all at the **same time**. The transmitter consists of the low-cost basic unit plus optional modules according to the end-user's requirements. Each module is in fact a small electronic board, which can be freely installed and removed from the main board in seconds.



1.1 Features

- **Intelligent sensor design -** Digital communication allows communication between the transmitter and the sensor up to 500m. Calibration data are stored in the sensor communication module. If the transmitter is changed for whatever reason, all the calibration data will be taken from the sensor directly. No calibration download mistakes.

- **Unique design -** Any upgrade or extra features are done inside of the flowmeter, keeping the original protection: **"Build in design"**.

- **Accuracy -** ±0.2% (0.5-10 m/s) of actual value.

- **Modbus RTU -** as standard for all communication modules.

- **Graphic display -** LCD 128x64 px graphical, contrast setup.

- **Reduced-bore body meeting U0D0 flow profile class requirements** available.

- **MID/OIML R49 certified version** available for sizes up to DN300.

- **WRAS APPROVED MATERIAL** available for sizes up to DN600.

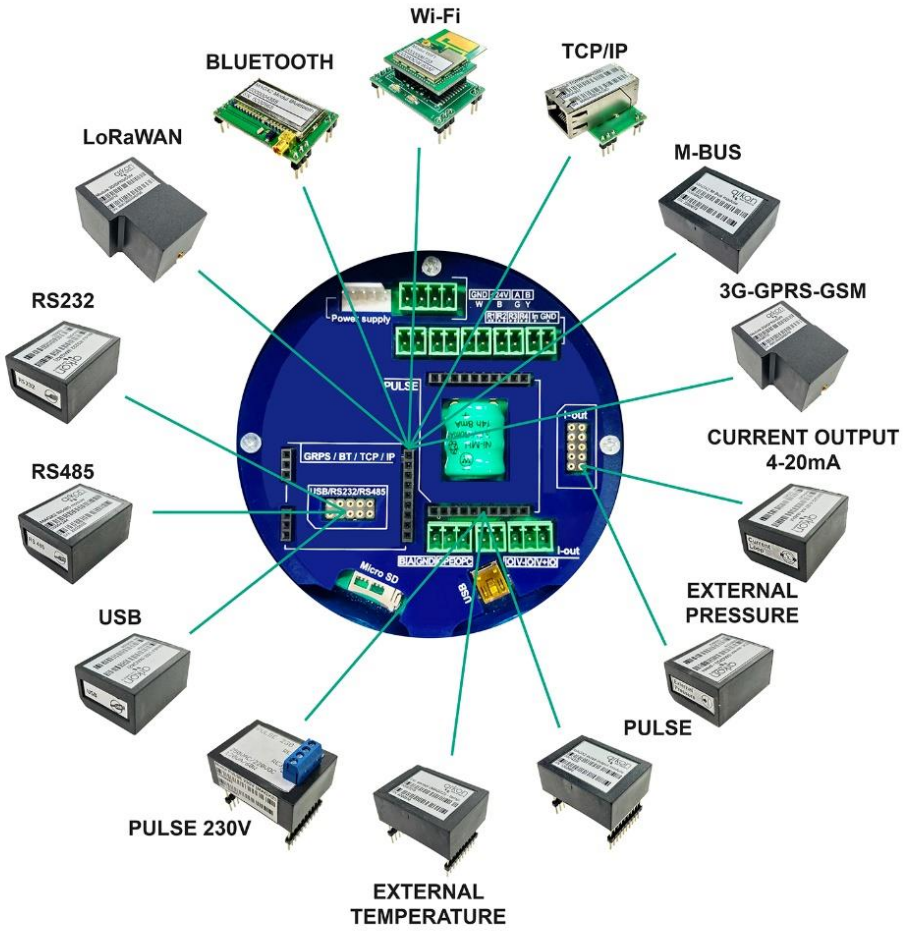
- **Menu -** Multi-language.
- **Protection systems -** 3 levels of passwords from unauthorized manipulation: User, Service, Factory setting.
  From accidental manipulation: lock-out systems for touch buttons.
- **Temperature sensor -** to measure temperature of the measured medium.
- **Output/Input options -** 3 analogues and 10 digital outputs 2 sensor inputs.
- **Free software and datalogger software -** Supplied on a pen drive with each flow meter and available for download at Arkon website.
- **Free upgrade** - last firmware versions can be downloaded from Arkon website.

http://www.arkon.co.uk/en/products/magx2.html

1.2 Operation

- Transmitter
- Modules
  - Required
  - Optional
- Sensor

1.3 Modular design's advantages



Build your own flowmeter

- “You don't pay for options you do not need”
- “You can build a flow meter exactly as per your requirement”
- “You can upgrade your flow meter at any time in the future”

“You don’t pay for options you do not want or need”

Our modular design allows you to save costs paying exactly for what you need

Why to pay for features you will not need or use? The modular design allows you to choose for each application exactly the required features and to pay just for them and not for any unnecessary extra feature.

“You can build a flowmeter exactly as per your requirements”

Our modular design allows you to build your own flowmeter

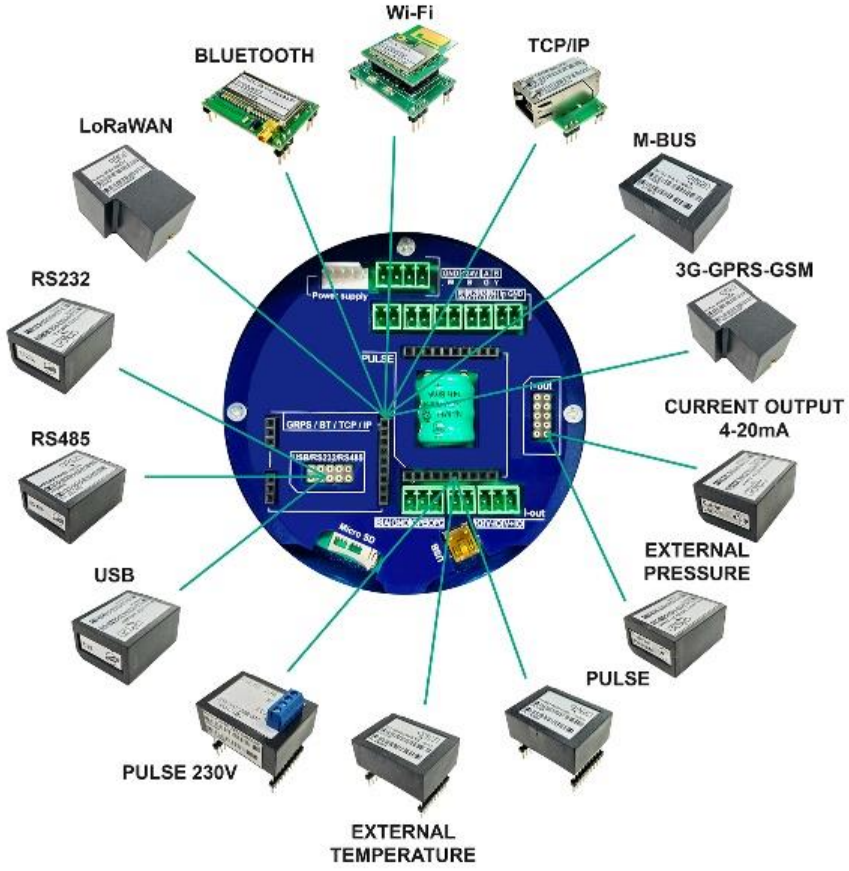
Arkon innovative modular design allows you to select for each time and application the combination of power supply, communication modules, outputs, inputs and data-logging. From low cost versions including just a display to highly sophisticated combination with last generation communication as 3G/GPRS/GMS, LoRa and NB-IOT. You decide every time!

“You can upgrade the flowmeter at anytime in the future”

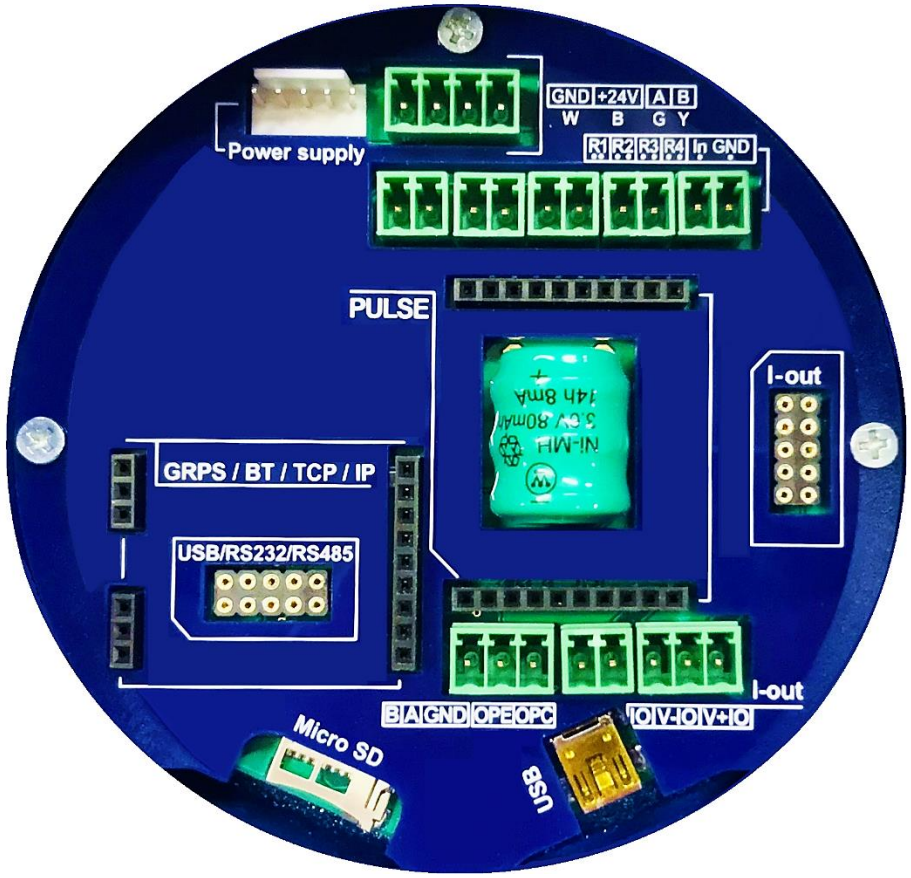
Our modular design allows you to upgrade your own flow meter

If you need new features for an application that has changed its specifications, this is no longer a problem with the MAGX2. You can add any module you want at any time, even long after the installation of the flow meter. The plug-and-play system makes the operation extremely easy, you only switch off, plug in a little module and switch on again. That is all, your flow meter has been upgraded!

1.4 Transmitter and modules



The MAGX2 Basic Transmitter Unit



The core element of any MAGX2 flowmeter.

Consists of the MAGX2 mother board with modules slots, touch button controls, graphic display and transmitter housing.

Available in compact and remote IP68 version. For remote versions, one of the three possible remote mounting kits is required.

Modbus RTU communication protocol for all communication modules

Modules

There are two types of modules:

- **Required modules**

The main modules, necessary for a working flow meter.

- **Optional modules**

They are not necessary for a working unit, they offer extra features.

Required modules

Sensor Communication module	Module located in the sensor. It converts the signal from analogue to digital. Calibration data are stored in it.
Power supply	90-250 VAC, 12-36 VDC Including battery back-up option

Optional modules

Analogue outputs	4-20mA current loop Pulse output Pulse 230 output
Digital outputs **(only one at the same time)**	RS232 communication USB communication RS485 communication TCP/IP communication Bluetooth communication 3G/GPRS/GMS communication Wi-Fi communication LoRa communication M-Bus communication NB-IOT communication
Sensor inputs	External Pressure sensor input module External Temperature sensor input module
Data-logger	Standard micro SD card

Analogue output modules

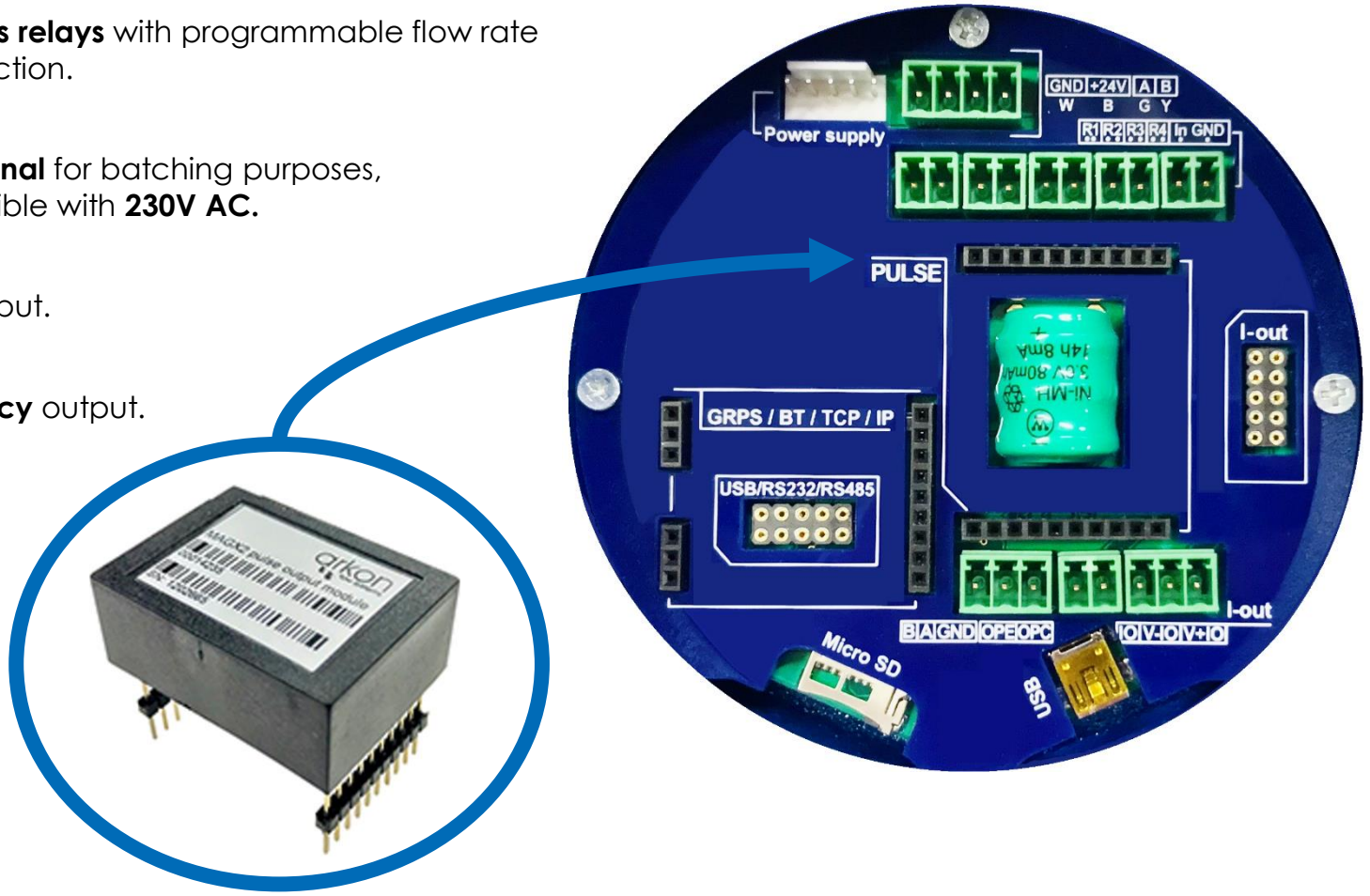
PULSE

PULSE 230

4-20mA CURRENT LOOP

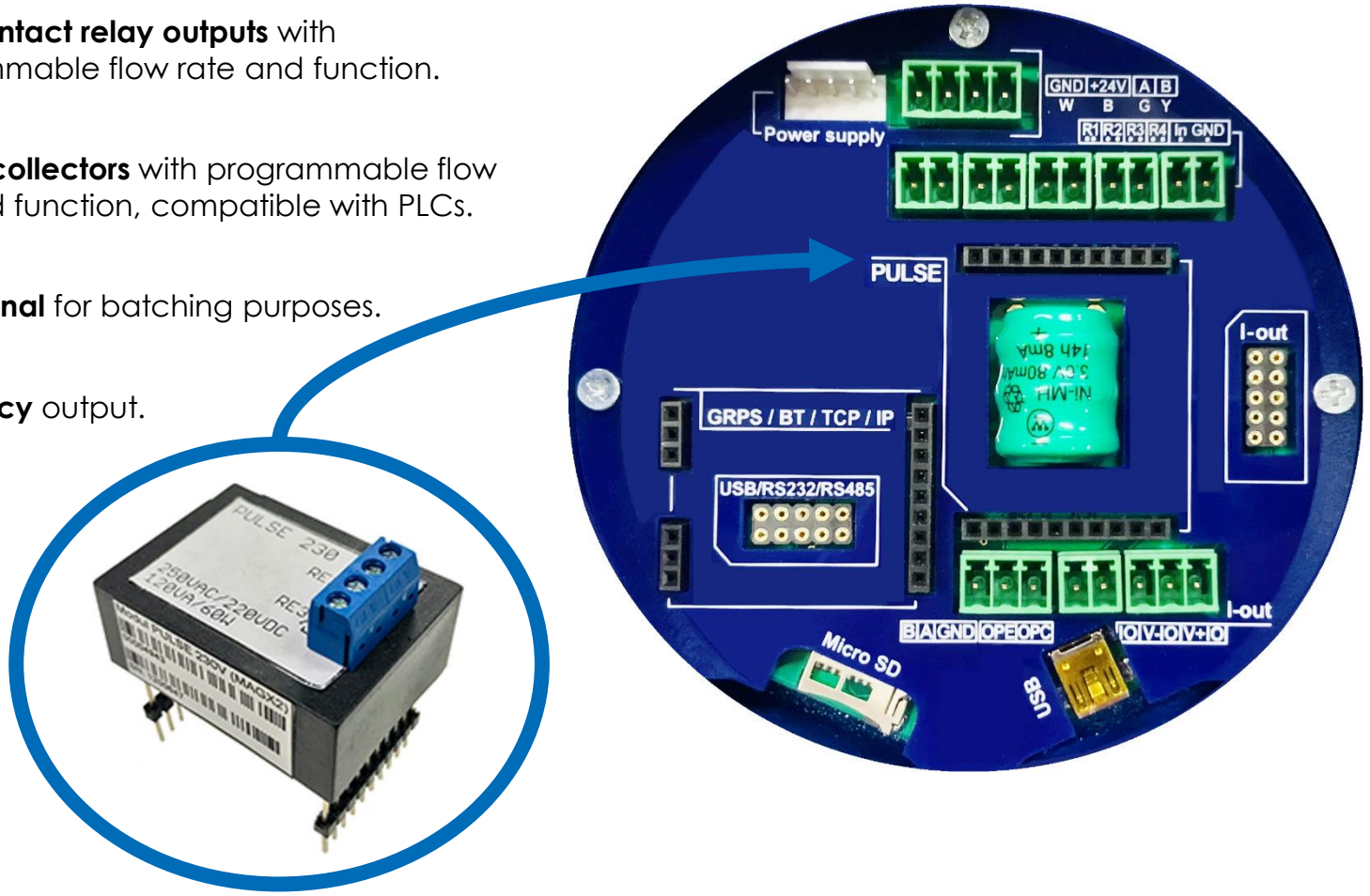
Pulse output module

- **4 outputs relays** with programmable flow rate and function.
- **Input signal** for batching purposes, compatible with **230V AC.**
- **Batch** input.
- **Frequency** output.



Pulse 230 output module

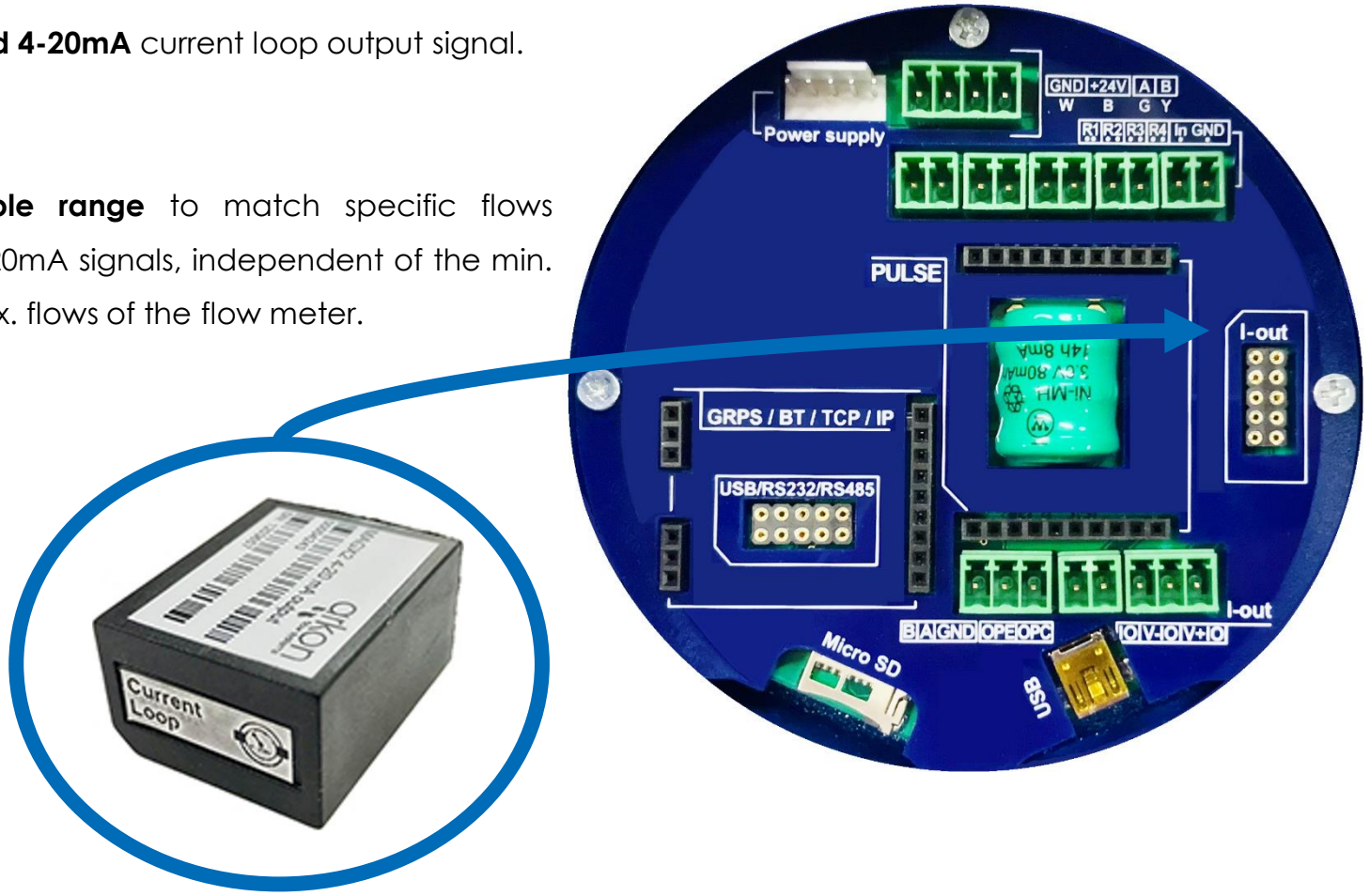
- **2 dry contact relay outputs** with programmable flow rate and function.
- **2 open collectors** with programmable flow rate and function, compatible with PLCs.
- **Input signal** for batching purposes.
- **Frequency** output.



4-20mA current loop output signal module

- **Standard 4-20mA** current loop output signal.

- **Adjustable range** to match specific flows to 4 to 20mA signals, independent of the min. and max. flows of the flow meter.



Power supply module

One power supply that covers 12-35 VDC and 90-250 VAC.

Battery back-up input option included as standard.

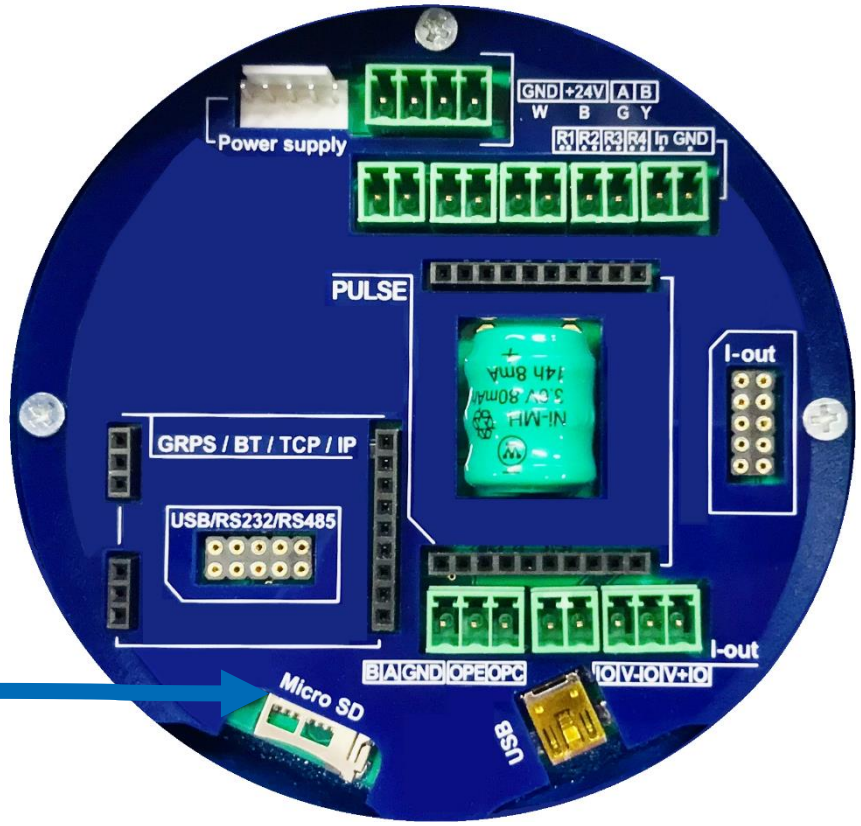
MAGX2 power supply module

Input Voltages ±5%	AC 90-250V (50-60 Hz) DC 12-36V
Max power / possible current consumption	AC max. 15 VA / max 170 mA DC max. 15 W / max 1,25 A
External battery backup	DC 12-36V / max 15W The power supply is not charging the back-up battery

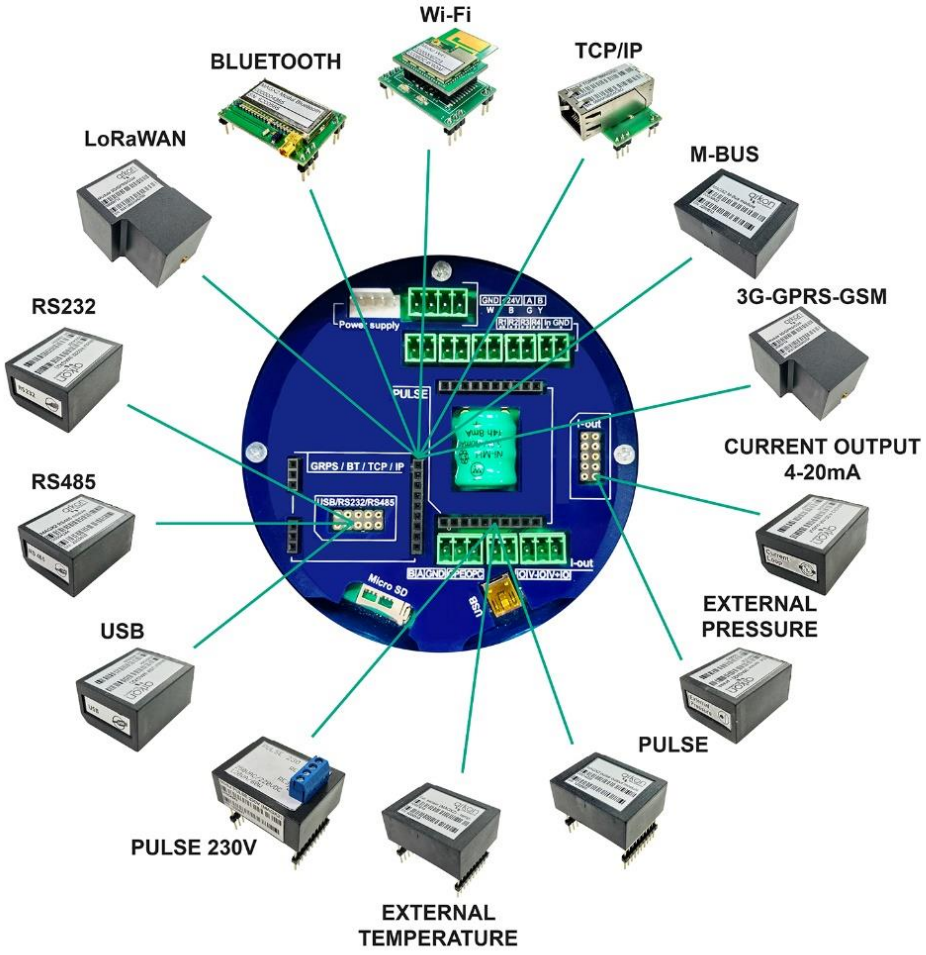
All equipped with electronic fuse**!**

Data logging: SD card

The MAGX2 uses, for data-logging purposes a standard micro **Secure Digital card**. This allows you to select for each application, the most suitable Secure Digital card from the market, according to your needs and requirements. It can be installed and removed easily from MAGX2 built- in socket. Data stored in *.csv format. Record intervals are selectable from 1minute to 24 hours.



Communication modules

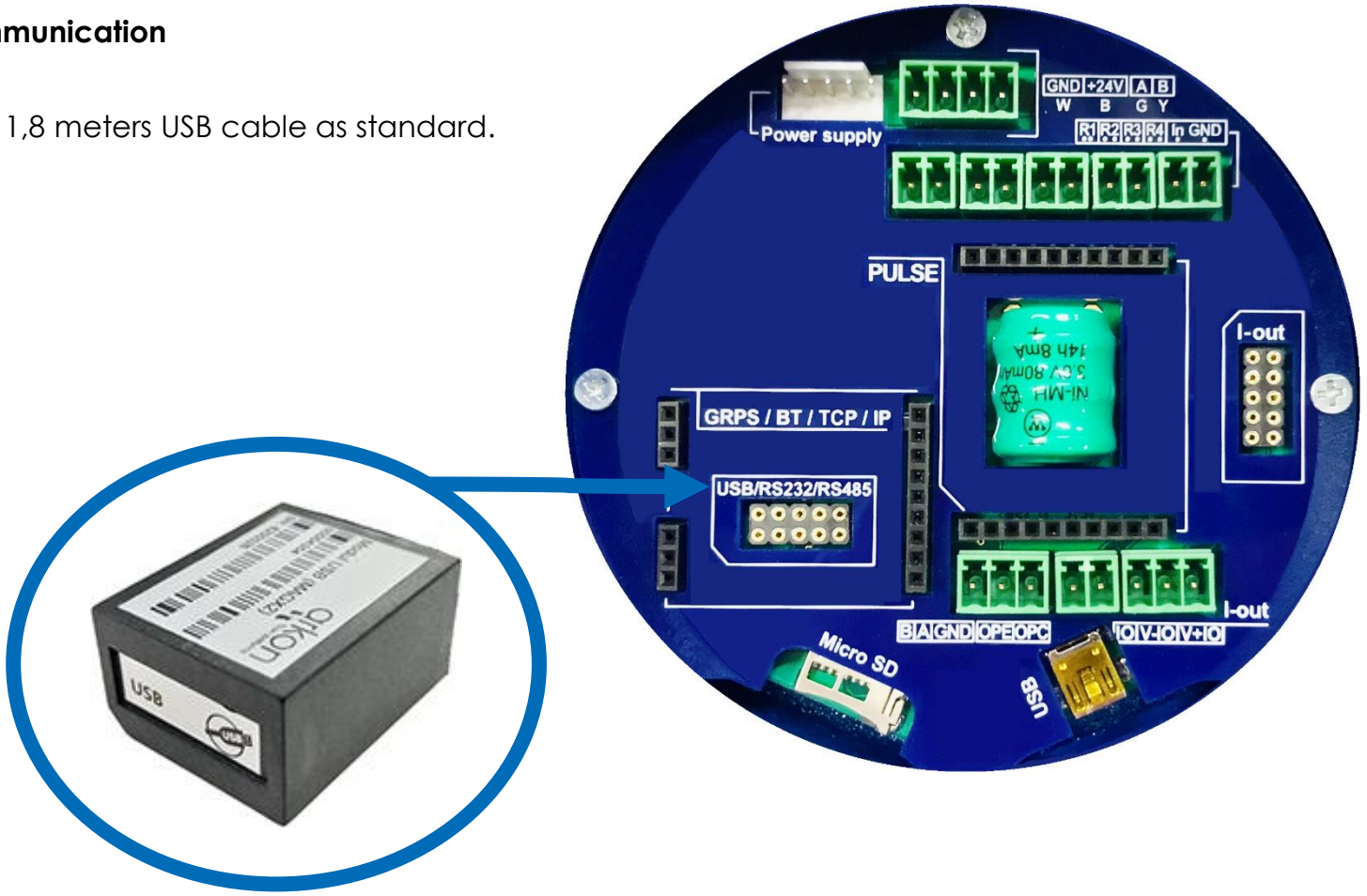


“Do you need to connect your laptop to your flow meter for quick data-downloading or flow meter configuration?””

The MAGX2 offers RS232, RS485, TCP/IP, USB, WIFI, or Bluetooth communication!

MAGX2 USB communication module

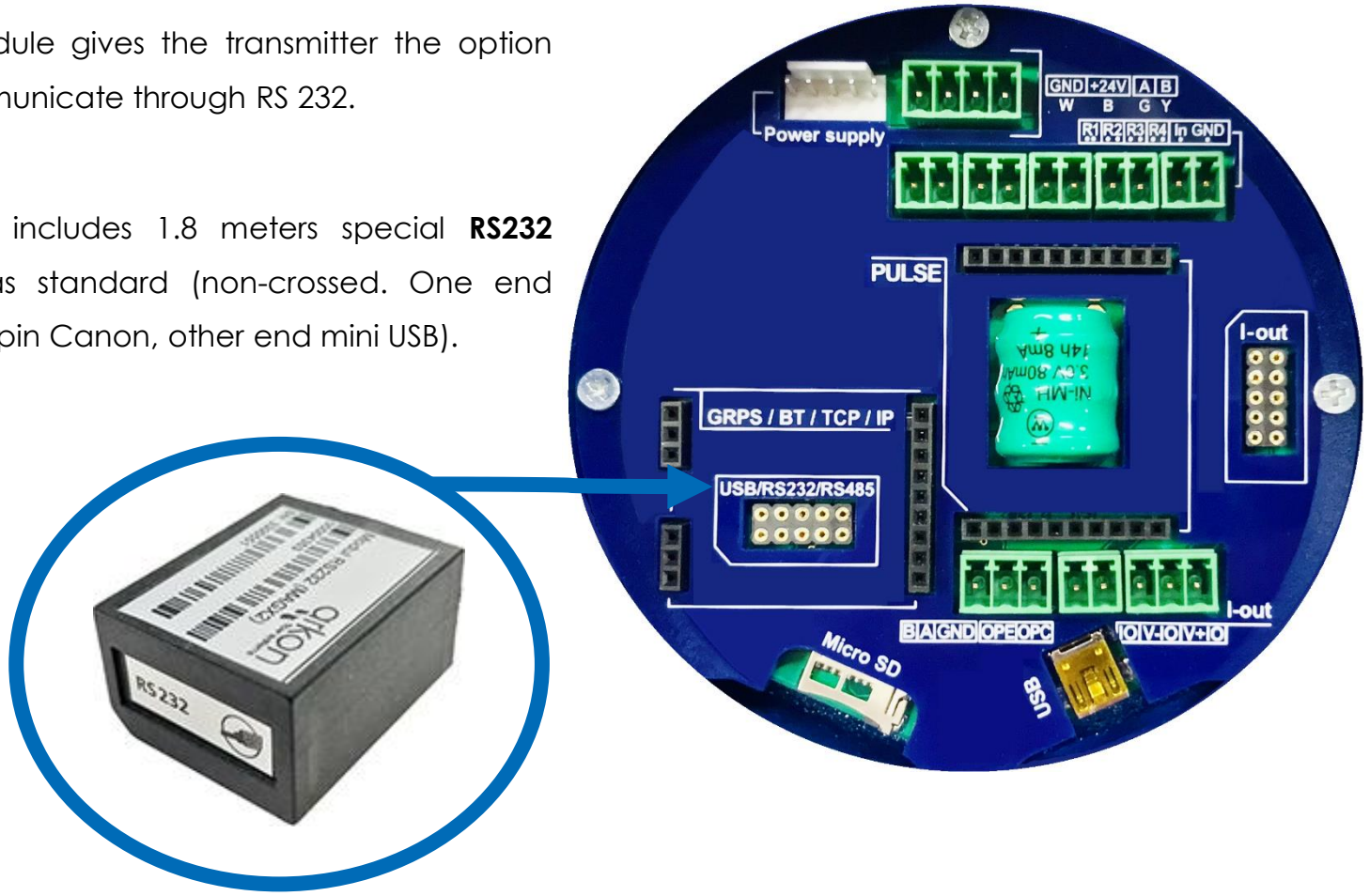
- **USB communication**
- Includes 1,8 meters USB cable as standard.



MAGX2 RS232 communication module

- This module gives the transmitter the option to communicate through RS 232.

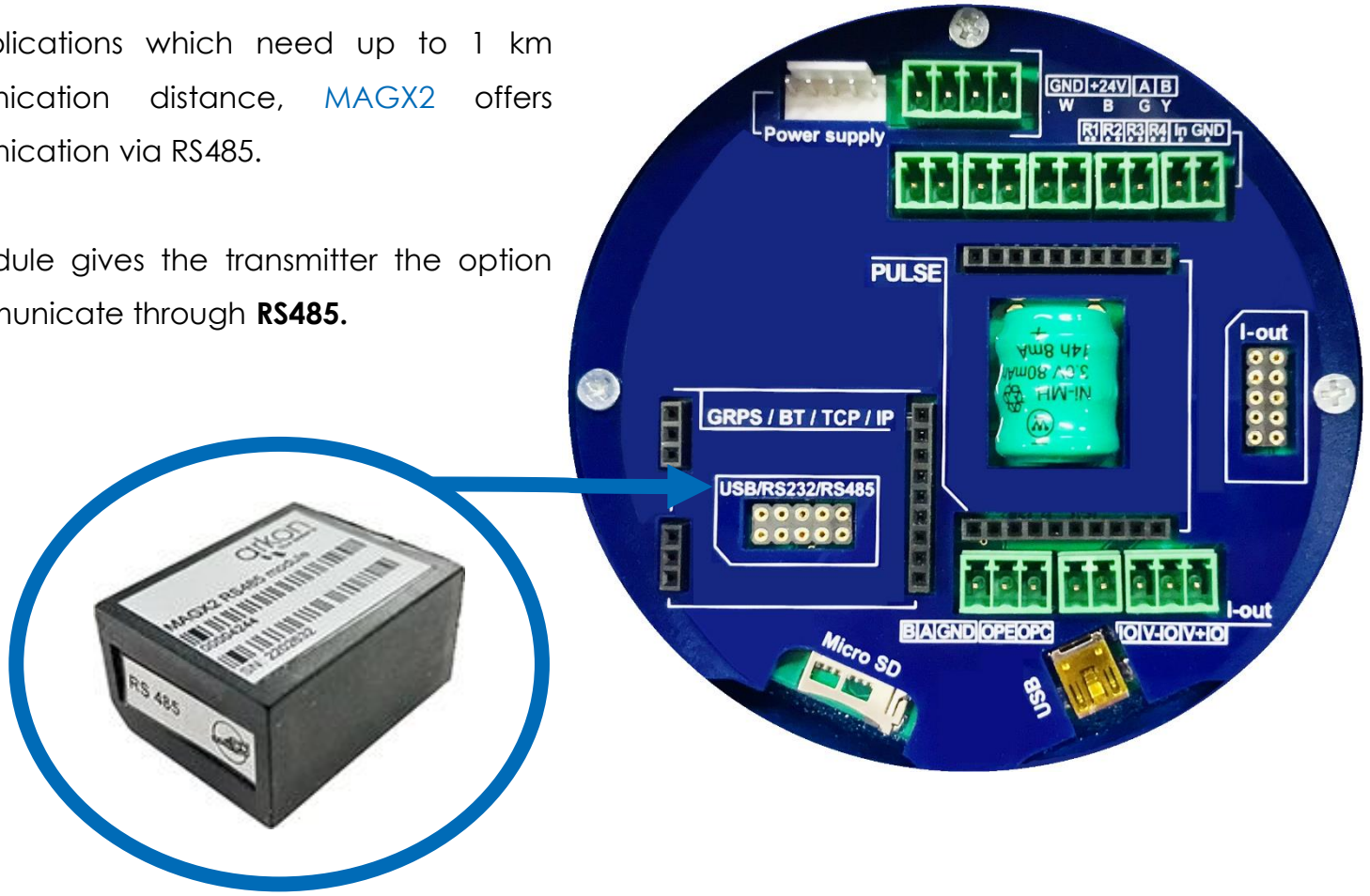
- Module includes 1.8 meters special **RS232 cable** as standard (non-crossed. One end RS232 9-pin Canon, other end mini USB).



MAGX2 RS485 communication module

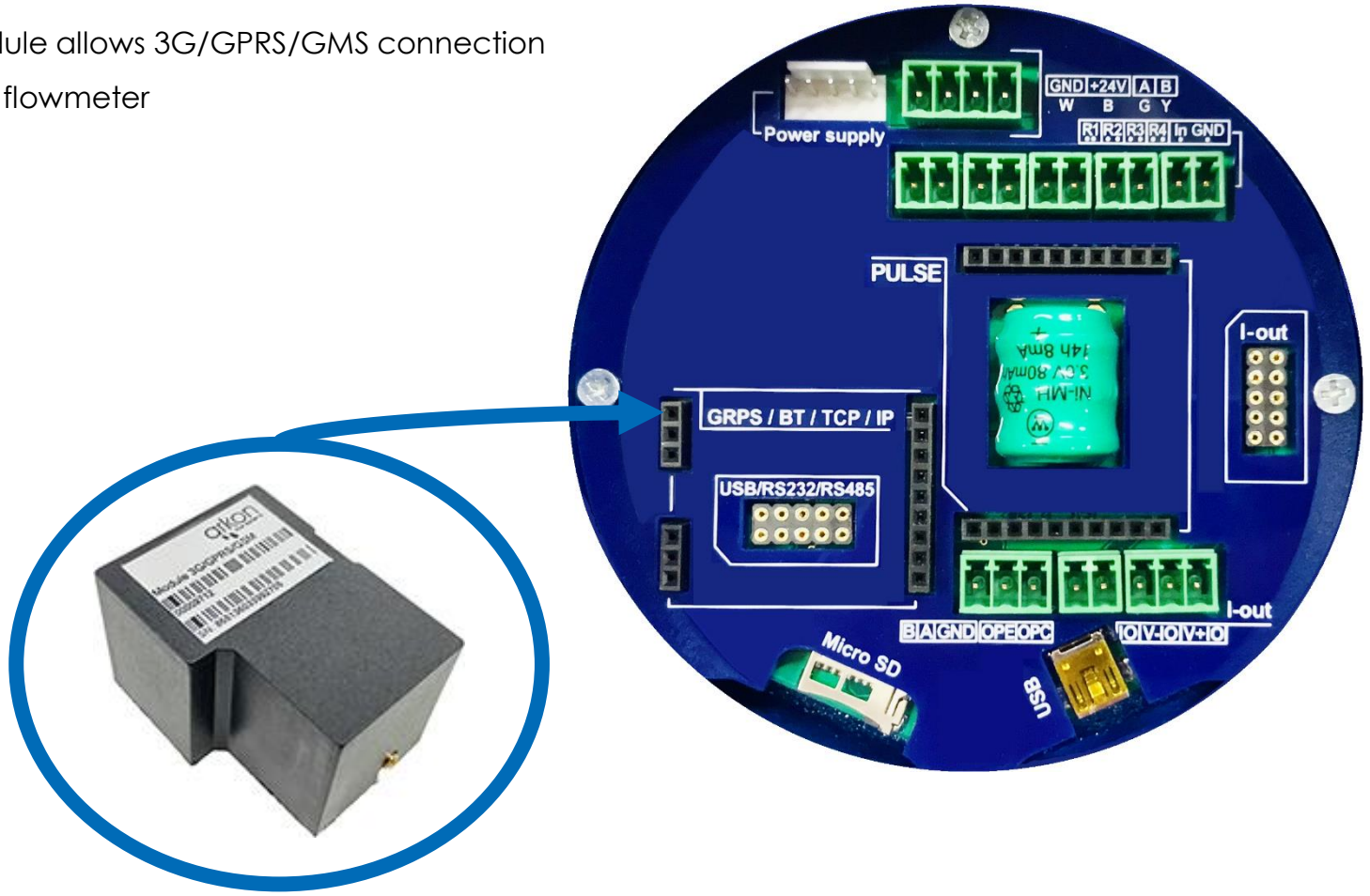
- For applications which need up to 1 km communication distance, MAGX2 offers communication via RS485.

- This module gives the transmitter the option to communicate through **RS485.**

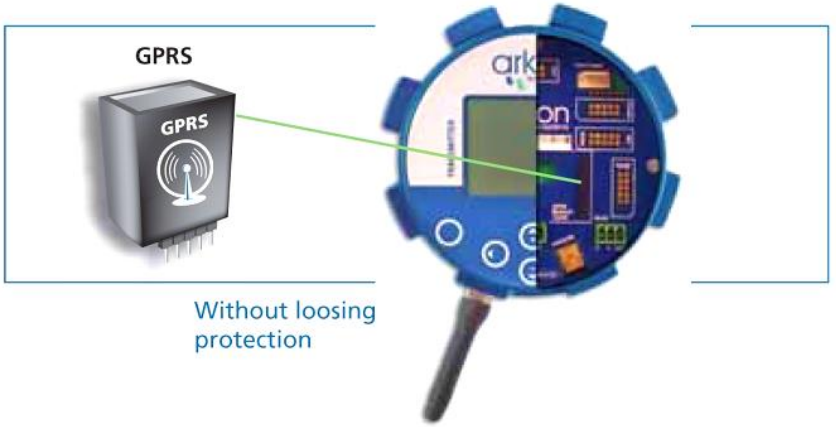


MAGX2 3G/GPRS/GMS communication module

- This module allows 3G/GPRS/GMS connection with the flowmeter



Advantages of Arkon's 3G/GPRS/GMS solution



Standard solution for 3G/GPRS/GMS:

Flow meter plus communication

Cable plus mounting device for

GPRS plus extra power supply

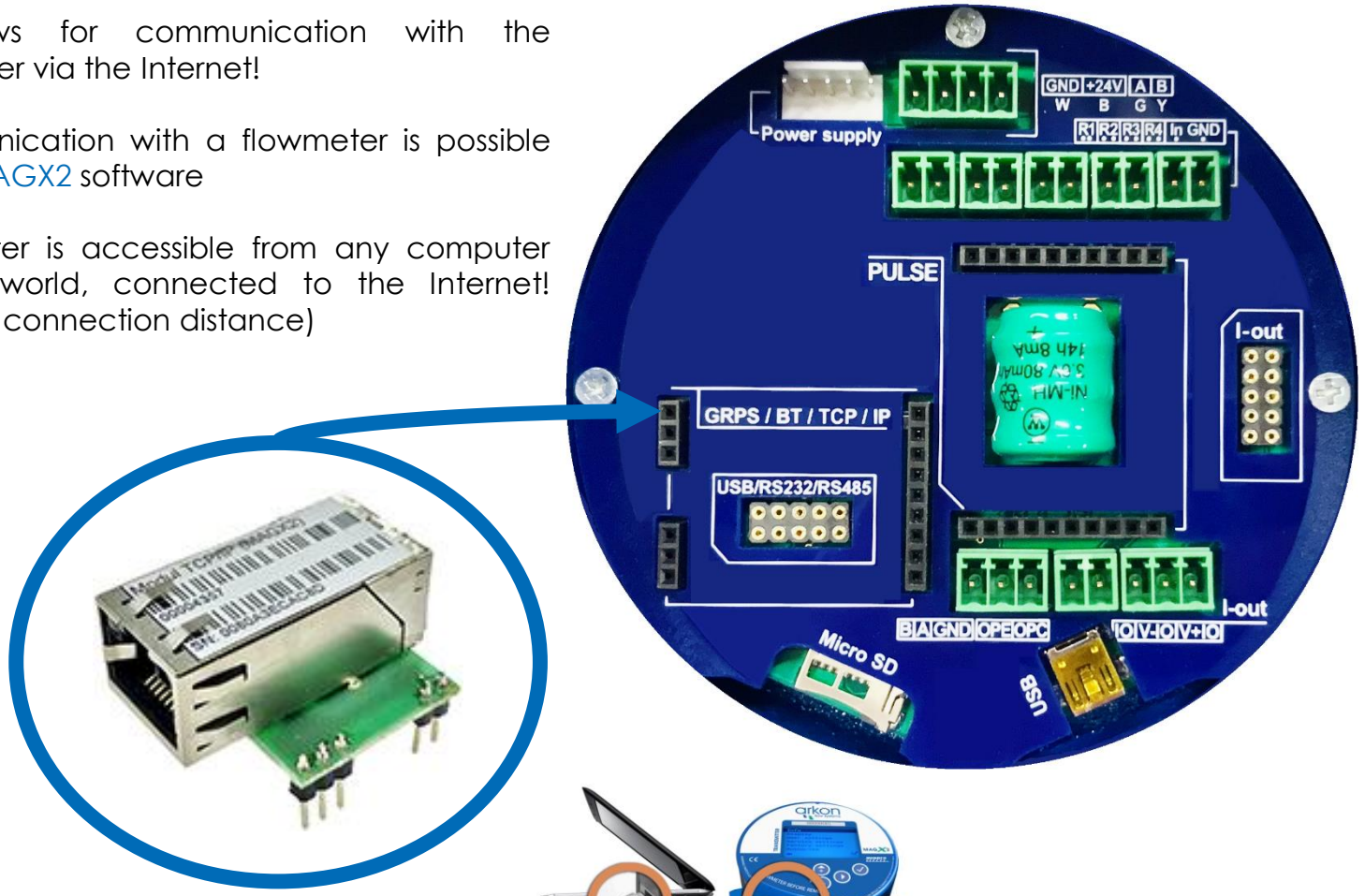
Our solution for 3G/GPRS/GMS:

3 step installation:

Open, plug in, close

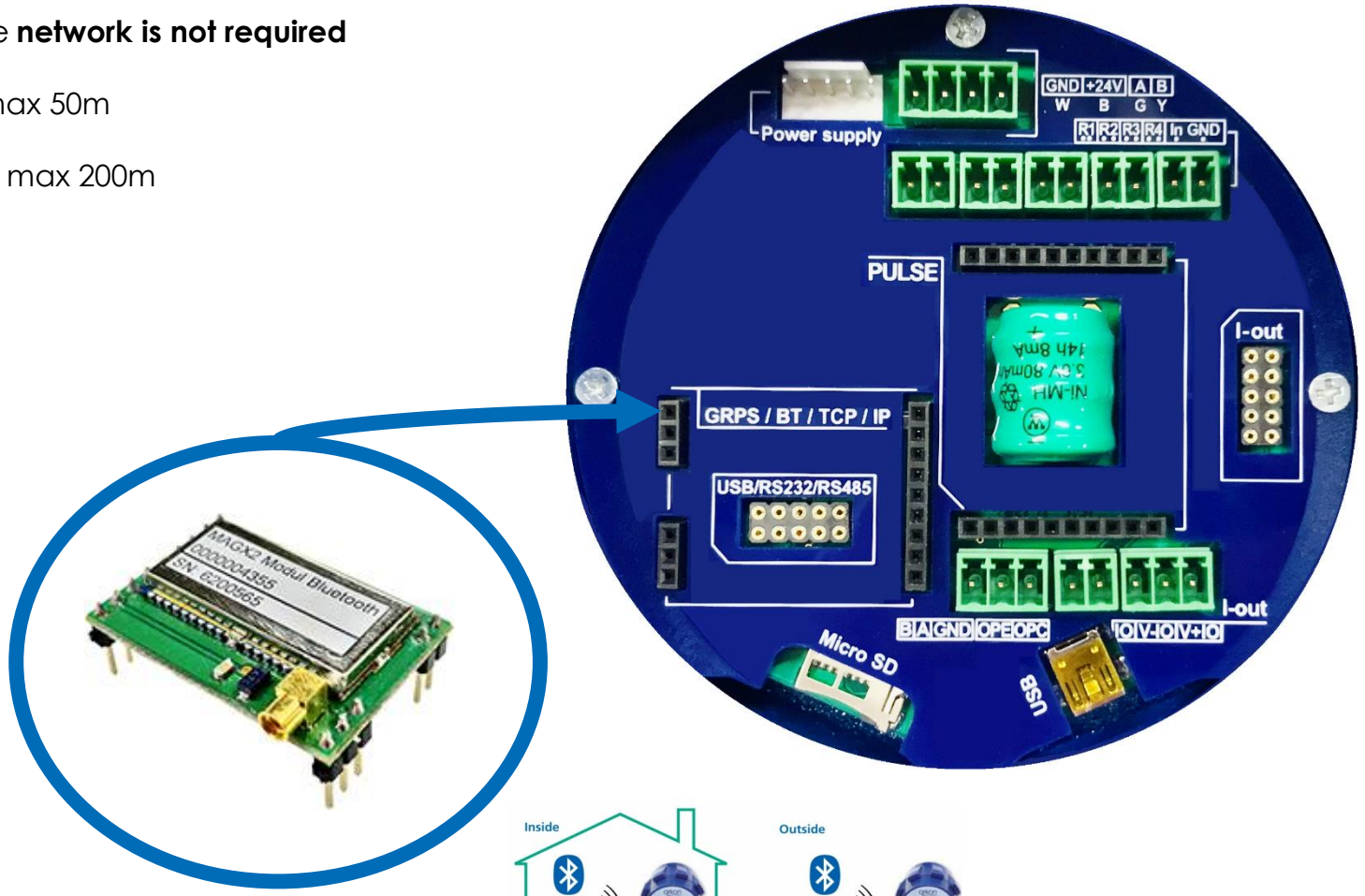
Connecting to PC – TCP/IP

- It allows for communication with the flowmeter via the Internet!
- Communication with a flowmeter is possible using MAGX2 software
- Flowmeter is accessible from any computer in the world, connected to the Internet! (limitless connection distance)



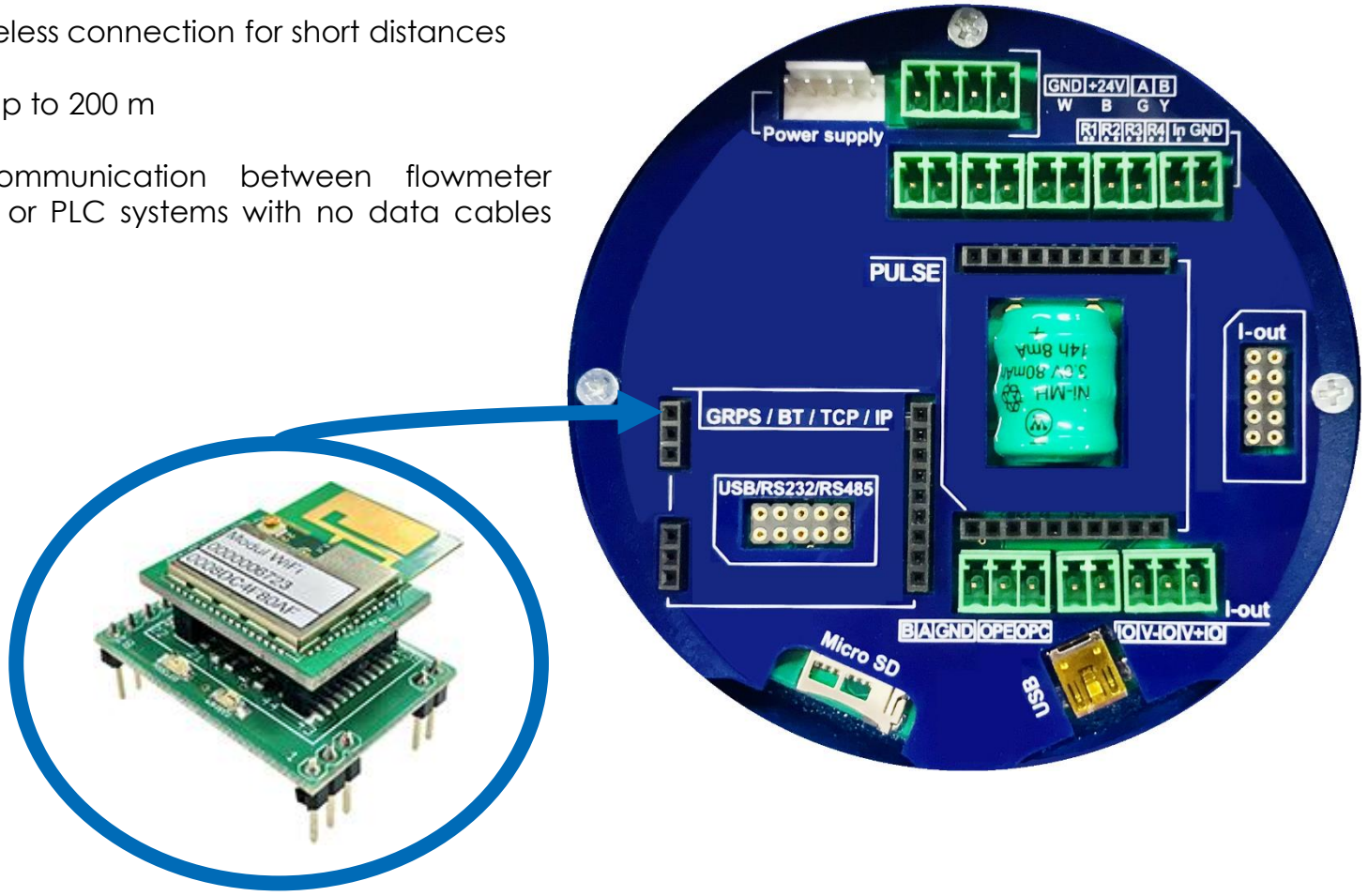
MAGX2 Bluetooth communication module

- A mobile **network is not required**
- Inside: max 50m
- Outside: max 200m



MAGX2 Wi-Fi communication module

- Easy wireless connection for short distances
- Range up to 200 m
- Easy communication between flowmeter and PC or PLC systems with no data cables needed



Arkon's long distance communications options

BLUETOOTH

Allows to connect to the flowmeter without needing a cable.

Limitations:
maximum distance 200m

TCP/IP

Allows to connect to the flowmeter from internet.

Limitations:
both the user and the flowmeter need to have access to internet

GPRS

Allows to connect to the flowmeter without needing a cable.

Limitations: the user need to have access to internet and the flowmeter need to have access to GSM network

Input modules

EXTERNAL TEMPERATURE MODULE

EXTERNAL PRESSURE MODULE

1.5 Sensor Options

- **Intelligent sensor,** digital communication, calibration data stored in sensor communication module
- **Connection types** possible: DIN, ANSI, Wafer, JIS 10K, Tri-Clamp
- **MID/OIML R49 certified Reduced-bore body** available for sizes up to DN300.
- **Self - cleaning** electrodes
- **Sizes** possible between 25 and 800mm nominal diameter (DN25-DN800 / 1"- 24")
- Sensor **liner materials** possible: Hard Rubber, Soft Rubber, Hygienic Rubber, PTFE.
- Nominal **pressure** ratings possible: PN10, PN16, PN25, PN40, 150psi, 300psi.
- **Electrode materials** possible: Hastelloy, Titanium, Platinum.

1.5 Sensor Options – Reduced-bore body version

- **Reduced bore body version of mains-powered MAGX2 flowmeter**
- **Suitable for applications and installations where piping installation conditions are difficult and U0D0 flow profile class requirements have to be met.**
- Accuracy class 2 (+-5% Q1-Q2, +-2% Q2-Q4)
- **PTFE**, **Hard Rubber** and **Soft Rubber** liners available
- Maximum applicable pressure class **MAP16**
- Compact and Remote configuration
- RS485 and frequency output
- Environmental class **B, E2**
- Flow profile class **U0D0**
- Temperature class T50
- Pressure loss **ΔP 16**
- Sizes up to DN250

Features, Advantages and Benefits of the MAGX2

1.6 Features, Advantages and Benefits of the MAGX2

- **Accuracy** 0,2% (0.5 to 10m/s) of actual value
- **Temperature sensor -** to measure temperature of the measured medium
- **Graphic display -** LCD 128x64 px graphical, contrast setup. Multi-language menu,
- **Protection system -** from unauthorized manipulation:

  3 levels of passwords – User, Service, Factory setting

  - From accidental manipulation: lock-out systems for touch buttons
- **Intelligent sensor design -** digital communication and calibration data are stored in the sensor communication module. If the transmitter is changed for whatever reason, all the calibration data will be taken from the sensor directly. No calibration download mistakes.
- **Modbus RTU** as standard for all communication modules
- **Free upgrade** of firmware, downloadable from Arkon website
- **Free software and data logger software** available for download at Arkon website.
- **3** analogue, **10** digital output options and **2** external sensors input.
- **Self - cleaning electrodes**
- **Electronic fuse** – power supply modules
- **MID** and **OIML** version available; also with Reduced-bore body version

"You don't pay for options you do not need"

"You can build a flow meter exactly as per your requirement"

"You can upgrade your flow meter at any time in the future"

2. MAGB2

The **MAGB2** has been specially developed for those applications where the possibility of a power supply network is not available. MAGB2 battery-powered electromagnetic flowmeter is completely autonomous with advanced functionality. Its benefits are flexible installation, high-precision volume measurement, and worldwide transmission of measured data via Modbus RTU protocol. MAGB2 flowmeter is able to transmit data via internal 3G/GPRS/GSM communication module. Data can be sent to our arkon.track online monitoring system or any other server. **MID/OIML R49** certified version available.

2.1 Features

- **Battery powered** electromagnetic water meter
- **Battery life** up to 10 years (5x3.6 V battery pack)
- **Battery conservation** when the pipe is empty
- **Modbus RTU** communication protocol via USB and RS485 module
- **4 totalizers** – total +, total -, total, aux
- **Adjustable filter** constant 1 – 30 excitations
- **Isolated frequency and relay output** (Pulse/Litre, Alarm)
- **Flow simulator** to check the binary output
- **Graphical display** 128*64dots and keypad for simple operation and instant access to information about totalizers
- **Easy access to data** on-site Standard USB interface for configuration and data collection using MAGB2 software
- **3G/GPRS/GMS and RS485 communication module, 4-20mA module, LoRa, NB-IOT and M-BUS module**
- **Reduced-bore body meeting U0D0 flow profile class requirements** available.
- **MID/OIML R49 certified version** available for sizes up to DN300**.**
- **WRAS APPROVED MATERIAL** available for sizes up to DN600.

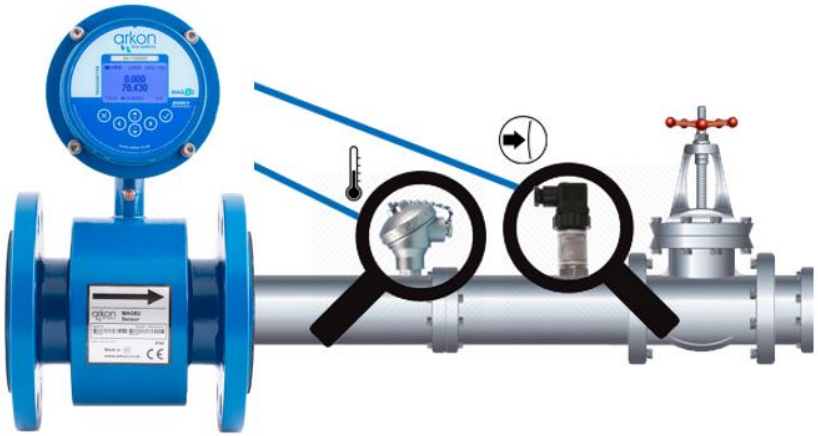
- Battery life up to **10 years**.
- **Compact** or **remote** (max 6m cable) mounting available.
- **Adjustable filter** constants 1 – 30 samples.
- Minimized inlet and outlet installation requirements.
- Maintenance free.
- Two built-in earthing electrodes.
- No moving parts in measuring tube.
- All units include a calibration certificate issued by an independent calibration rig, traceable to international standards, and calibration data is stored inside the instrument.

NOTE: We strongly recommend using the battery supplied and approved by the manufacturer to keep the guaranteed specifications mentioned in our manual.

External input options

EXTERNAL TEMPERATURE SENSOR

EXTERNAL PRESSURE SENSOR



2.2 Operation

The flow meter takes a sample every X seconds. This sample time is selectable from 1,5 to 60 seconds. Default setting for sample time is 15 seconds.

To get the flow rate, the flow meter does the average of the last Y samples. The number of samples used for the average is selectable from 1 to 30 samples. Default setting for number of samples used to get the flow rate is 10 samples.

2.3 Sensor Options

- **Connection types** possible: DIN, ANSI Flanged. Other types on request.
- **Sizes** possible between 25 and 600 mm nominal diameter, other sizes on request.
- Sensor **liner materials** possible: Hard Rubber, Soft Rubber, Hygienic Rubber, PTFE.
- **MID/OIML R49 certified Reduced-bore body** available for sizes up to DN300.
- Nominal **pressure** ratings possible: PN10, PN16, PN25, PN40, 150psi, 300psi.
- **Electrode materials** possible: Hastelloy, Titanium, Platinum.

2.3 Sensor Options – Reduced-bore body version

- **Reduced bore body version of battery-powered MAGB2 flowmeter with battery life up to 10 y.**
- **Suitable for applications and installations where piping installation conditions are difficult and U0D0 flow profile class requirements have to be met.**
- Accuracy class 2 (+-5% Q1-Q2, +-2% Q2-Q4)
- **PTFE**, **Hard Rubber** and **Soft Rubber** liners available
- **MID** and **OIML R49** certified version available
- Maximum applicable pressure class **MAP16**
- Compact and Remote configuration
- RS485 and frequency output
- Environmental class **B, E2**
- Flow profile class **U0D0**
- Temperature class T50
- Pressure loss **ΔP 16**
- Sizes up to DN250

2.4 Measuring Instruments Directive (MID)

The Measuring Instruments Directive (MID) applies to measuring instruments for taking measurements that have legal effect, for the purpose of harmonizing the requirements that these instruments must meet in order to be eligible for sale in the European Union.

MAGB2 flowmeter is designed to measure, memorize and display the volume at metering conditions of water passing through the measurement transducer in the sensor of the **Directive 2014/32/EU** of the European Parliament and of the Council of the harmonization of the laws of the Member States to the making available on the market of measuring instruments.

3. MAGE1

The **MAGE1** is economic flowmeter with carbon steel sensor and plastic transmitter that satisfy standard customer requirements. It is mains powered flowmeter (9-35 VDC) with 4-20 mA output, RS485 communication and internal data-logger.

3.1 Features

- **Accuracy:** ±0,5% (0,5 to 10 m/s) of actual value
- **Communication:** RS485 – Modbus RTU
- **Sizes:** from 25 – 250 mm (1"- 10")
- **Connection:** DIN, ANSI, other on request
- **Power Supply:** 9-35 VDC
- **Min. Media Electrical conductivity:** ≥5µS/cm ≥20µS/cm for demineralized water
- **Flow Range:** 0,1 to 10 m/s
- **Flange material:** Steel 1.0036 or higher
- **WRAS APPROVED MATERIAL** for sizes up to DN600

4. MAGS1

The **MAGS1** is a stand-alone version flowmeter, which does not need a transmitter and can be operated on its own. If you need a low cost flowmeter without a read out on a display and outputs, this will be the right one.

4.1 Features

- **Accuracy:** ±0,2% (0,5 to 10 m/s) of actual value
- **Communication:** RS485 – Modbus RTU
- **Sizes:** from 25 – 600 mm (1"- 10")
- **Connection:** DIN, ANSI, other on request
- **Power Supply:** 24VDC ± 10% @ 0.5A max
- **Min. Media Electrical conductivity:** ≥5µS/cm ≥20µS/cm for demineralized water
- **Flow Range:** 0,1 to 10 m/s; 0,015 – 10.000 l/s
- **Flange material:** Steel 1.0036 or higher, Dimensions according to DIN EN 1092-1, ASME B 16.5, JIS B 2239
- **WRAS APPROVED MATERIAL** for sizes up to DN600

- **Max. media temperature:** 70°C (158°F) for Hard Rubber liner, 130°C (266°F) for PTFE liner
- **Ambient temperature:** -20° to 60°C (-4 to 140°F)
- **Sensor Protection:** IP68 (Nema 6)
- **Liner:** Hard Rubber, PTFE, other material on request
- **Outer casing:** Carbon steel (1.0036) as standard
- **Maximum nominal pressure:** PN 40/300 psi

5. VeriMAG1

Stand-alone smart field testing instrument.

Checks the MAGB2 flowmeter towards its original calibration certificate.

Determine internal fault, inaccuracies or early signs of failure.

Capable of storing 60 meter tests in internal storage.

Easy to operate with a user-friendly software.

6. VeriMAG2

Stand-alone smart field testing instrument.

Checks the MAGX2 flowmeter towards its original calibration certificate.

Determine internal fault, inaccuracies or early signs of failure.

Capable of storing 60 meter tests in internal storage.

Easy to operate with a user-friendly software.

7. Agrimag

Agrimag – A New Flowmeter for Agricultural Applications

The new **Agrimag** is a low cost battery powered flowmeter. Its polypropylene construction makes its price very competitive compared with standard construction magnetic flowmeters. It is an ideal solution for use in applications without power lines, where the required accuracy is 1% and where no communications are required, such as agricultural applications. It is powered by 6 AA batteries.

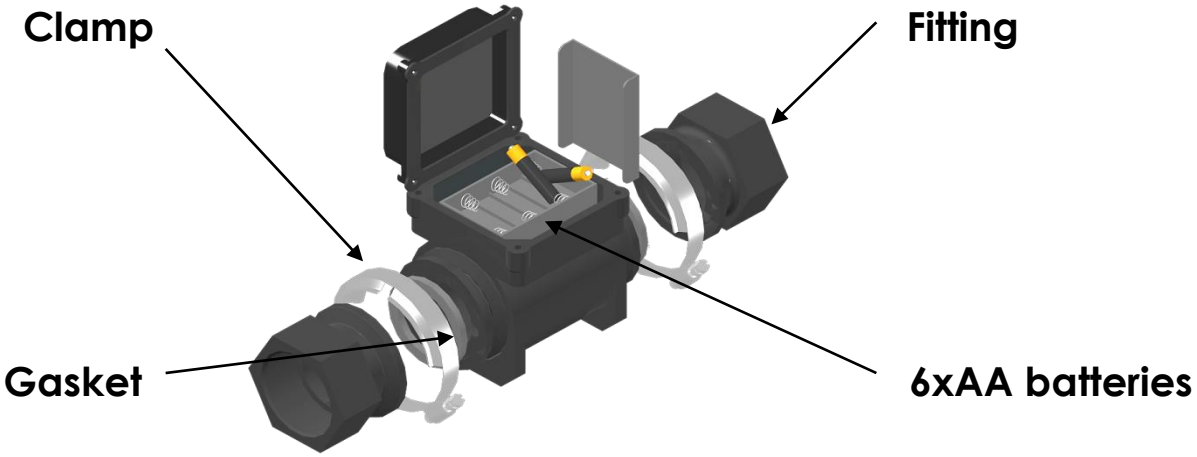
AgrimagP

AgrimagP – The new Arkon plastic flowmeter with power supply and output for multiple application: Industrial wastewater discharge, Water Recycling Systems, Irrigation, Water Well Pump Stations

The new **AgrimagP** is a low cost power supplied flowmeter. Its polypropylene construction makes its price very competitive compared with standard construction magnetic flowmeters. It is an ideal solution for use in applications where the required accuracy is 1% and where no communications are required, such as agricultural applications. It is powered by external power supply, range is 9-35 VDC. Frequency output preset for full range at 1000Hz/Flow max.

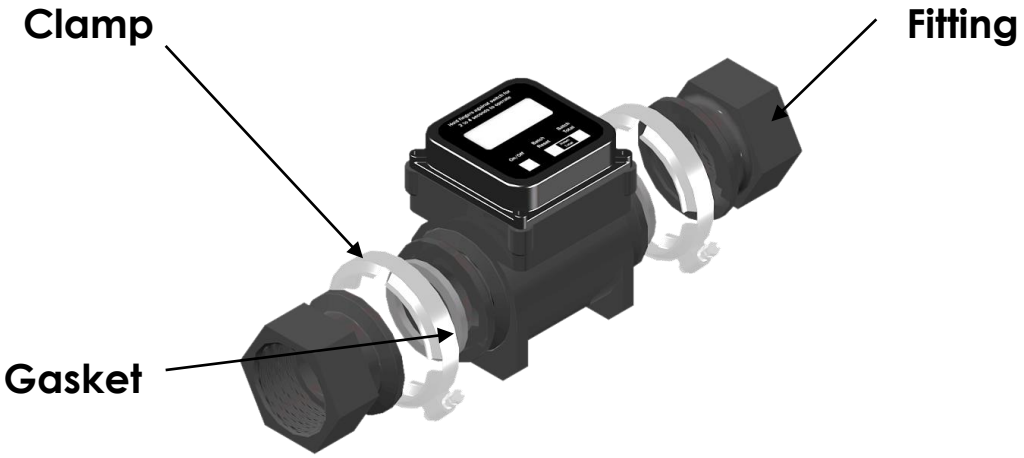
7.1 Features Agrimag

- **Accuracy:** ±1% from 10% to 100% of full scale range
- **Powered by 6 x AA batteries.** Batteries easily interchangeable
- **Battery life:** 1 year with meter in use, 3 years in sleeping mode
- **Connections:** Flange clamps
- **No earthing rings required** (built in earthing electrodes as standard)
- **Fitting kits for Manifold:** Male BSP, Female NPT, Male NPT, Male NPT in SS and other on request.



7.1 Features AgrimagP

- **Accuracy:** ±1% from 10% to 100% of full scale range
- **Powered by external power supply**
- **Power supply range is 9-35VDC**
- **Output preset for full range at 1000Hz/Flow max**
- **Connections:** Flange clamps
- **No earthing rings required** (built in earthing electrodes as standard)
- **Fitting kits for Manifold:** Male BSP, Female NPT, Male NPT, Male NPT in SS and other on request.



7.1 Features AgrimagP2

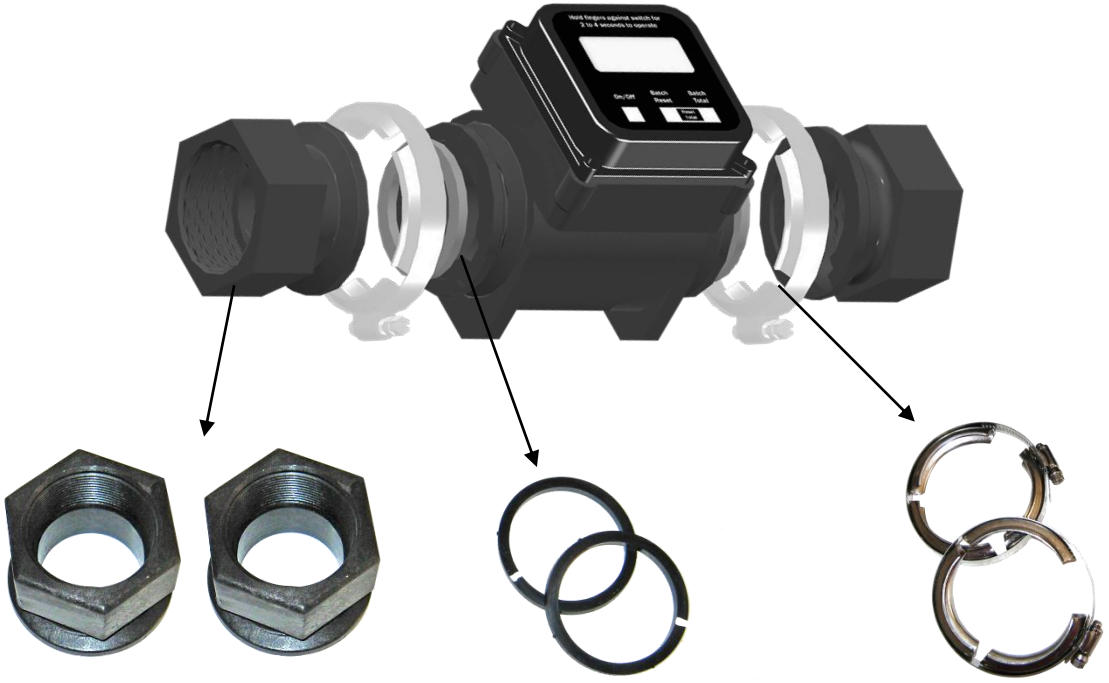
- **Accuracy:** ±1% from 10% to 100% of full scale range
- **4-20mA current loop output** and **RS485 Modbus RTU output**
- **Power supply range 9-35VDC**
- **Output preset for full range at 1000Hz/Flow max**
- **Connections:** Flange clamps
- **No earthing rings required** (built in earthing electrodes as standard)
- **Fitting kits for Manifold:** BSP, NPT, hose barb and other on request.
- **Data logger:** Flash memory 131 072 records, 15 seconds minimal record interval. Saves Date, Time and Total volume

Agrimag series

- **Sizes available:** 25, 50, 80mm (1, 2 and 3 inches)
- **Body material:** polypropylene
- **Empty pipe detection and battery saving mode**
- **LCD display 128x64 px graphical**
- **Display shows:** actual flow, totalizer and auxiliary totalizer
- **4 stainless steel electrodes**
- **Bidirectional measurement.** (Only one direction for totalizer)
- **Working pressure:** 150psi or 10.3 bars

7.2 Fitting Kits

All the fitting kits except the spare clamp pair and spare gasket pair includes:



2 fitting parts

2 gaskets

2 clamps

Fitting parts

Male NPT
(National Pipe Thread Taper)

There are available reducers from 1” to ¾” and 1.1/4”

Female NPT
(National Pipe Thread Taper)

There are available reducers from 1” to ½” and ¾”

Fitting parts

Male BSP
(British standard pipe)

There are no reducers available for this connection

Hose barb

For 1” there are available reducers to ¾” and 1.1/4”
For 2” there are available reducers to 1”, 1.1/4” and 1.1/2”
For 3” there are available reducers to 2”

8. Mounting System, Modbus RTU and Calibration

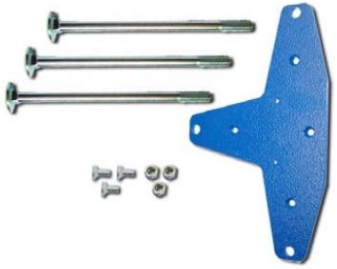
8.1 Mounting System for MAGX2 and MAGB2

All MAGX2 and MAGB2 electromagnetic flowmeters have different mounting options.

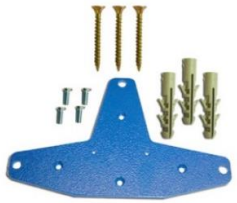
Wall

DIN Rail

Pannel



8.1 Mounting System for MAGX2 and MAGB2



Mounting options
“meeting customer needs”

Four possible ways to mount the transmitter:

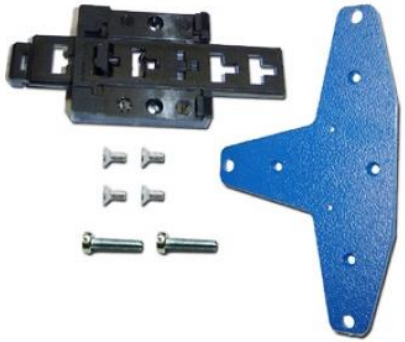
- 1 Compact
- 3 Remote options:

  - Remote Wall mounting
  - Remote Panel Mounting
  - Remote DIN-Rail Mounting

Remote Wall mounting

Remote Panel mounting

Remote DIN-Rail Mounting



8.2 MODBUS RTU Communication

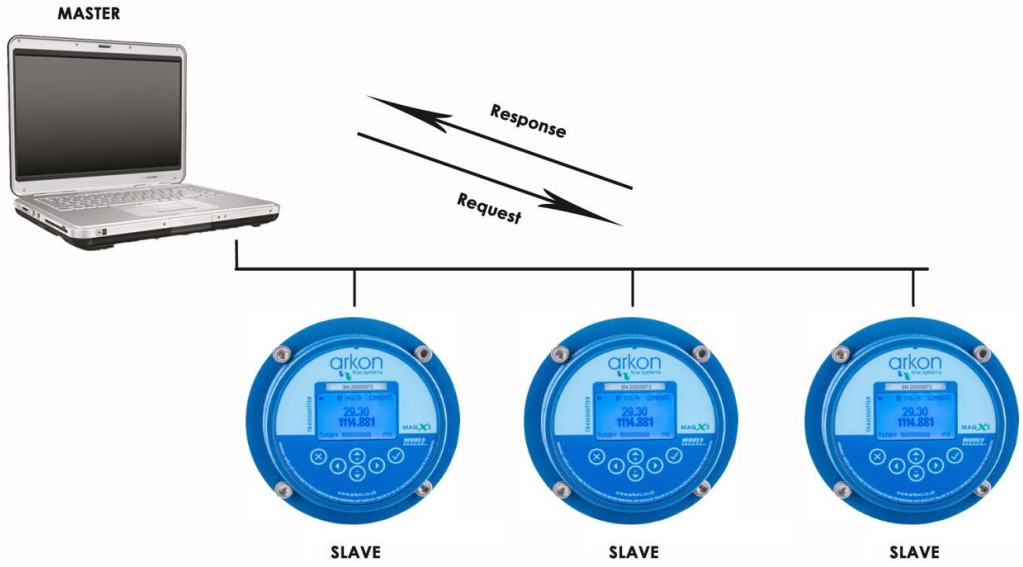
All MAGX2, MAGB2 and MAGS1 electromagnetic flowmeters use **Modbus RTU** protocol.

Modbus RTU as standard

Modbus can be use with most communication modules: **RS232, RS485, USB, TCP/IP, WiFi, Bluetooth**.

MAGX2/MAGB2/MAGS1/MAGE1/AgrimagP2 is a **slave device** type.

Baud rates: 4800, 9600, 19200, 38400 **up to 31 devices** without repeaters.



8.3 Calibrations

- All Arkon flow meters are calibrated at one of the Czech Republic calibration laboratory facilities. All those laboratories are traceable to the main Czech national standards that are maintained in the Czech Metrology Institute (CMI). CMI is the Czech national metrology body and is traceable to international standards such as TUV Germany and Delft Netherlands.

- All our flow meters are wet calibrated, i.e. the flow rate is calibrated directly by comparison with a traceable flow meter. If re-calibration is requested, the flow meter should be recalibrated as a whole unit including the sensor. Accuracy of the flow meter depends not only on the stability of the electronic unit, but also on the stability and mechanical changes of the liner. This is generally valid for all electromagnetic flow meters.

- We offer a standard 3 point calibration, on request we can offer up to a 10 point calibration at an extra cost.

- Arkon software enables the entering of a measured misreading (error) during calibration directly in percentage. This simplifies the calibration making it much easier to complete.

CERTIFICATE OF CALIBRATION

Page No.: 1/1

Calibration certificate No: S20204598

Meter:	Electromagnetic flowmeter
Customer:	Arkon Flow Systems, s.r.o.
Type:	MAGX2
Serial number:	20204598
DN:	100

Test conditions:

The primary head has been calibrated against a volumetric metod at authorized metrological centre.
The calibration certificate of this method documents the traceability to national standards, which realize the physical units of measurement according to the international System of Units (SI).

The measurements are traceable to International standards.

Standard flowmeters:	YOKOGAWA AXF015G DN15, YOKOGAWA AXF015G DN80
Conductivity of the calibration water:	300 µS/cm
Test medium:	clear water
Water temperature in test:	(21 ± 0,5)C°

The calibration were carried out with an inlet and outlet section-lenght of 5-10D.

Results of the test:

The measured values were computer-processed into the following table:

Flow (m3/hr)	Error (%)	U (%)
40,0	0,05	0,3
20,0	0,07	0,3
8,00	-0,01	0,3

Date of calibration: 19,04,2014
Date of issue: 19,04,2014

Arkon Flow Systems, s.r.o.
Dušan Tichý

.....
Signature

Arkon Flow Systems, s.r.o.
Berkova 534/92, 612 00 Brno, Czech Republic, Email: office@arkon.co.uk
Web: www.arkon.co.uk

Arkon internal calibration rig

Brno, Czech Republic

- Suitable for sizes from 10 to 150 mm
- Internal calibrations and R & D activities

Accredited Calibration rig, Brno, Czech Republic

II. Ultrasonic Flow and Level meters

MHU

MQU

1. MHU

The **MHU** is the Arkon ultrasonic level meter. It consist of a transmitter and a probe. This probe is available for 3 measurement ranges: 2, 4 and 6 meter. The transmitter includes a LCD display, 4 buttons, internal data-logger, communication RS232 or RS485 (only one can be selected), temperature compensation and analogue and binary output. **MHU** deliveries also includes a mounting bracket. The **MHU** is available for measurement with 1 or 2 sensors.

2. **MQU**

The **MQU** is the Arkon ultrasonic flowmeter for open channels. It should be use in combination of a flume. It consist in Arkon's **MQU** transmitter and a probe. The probe has a measurement range of 0.5, 2 or 4 meters. The transmitter includes a LCD display, 4 buttons, internal data-logger, communication RS232 or RS485 (only one can be selected), temperature compensation and analogue and binary output. **MQU** deliveries also includes a mounting bracket. There is available a version for measurement with 2 sensors instead of 1.

III. Flumes

PARSHALL FLUMES

Arkon **Parshall Flumes** are primary flow devices with a wide range of applications, for measuring open channel flow. They can be used for flow measurement in creeks, irrigation and/or drainage channels, sewer outfalls, waste water treatment plants, etc. Arkon **Parshall Flumes** are made of polypropylene and are resistant to air temperatures up to 80°C (however, water inside the flume must not get frozen). Moreover, Arkon **Parshall Flumes** can stand up well the solutions of inorganic salts, acids and bases that do not exhibit strong oxidation properties, and a majority of organic solvents.

IV. Flow Indicators

Arkon offers 7 kinds of mechanical flow indicators suitable for most liquids and gases:

Ball Flow Indicators

Window Indicators

Spinner Flow Indicators

Paddle Wheel Indicators

Flap Flow Indicators

Plain Sight Indicators

Tube Flow Indicators

V. Ultrasonic clamp-on

USCXseries

USCXseries offer Ultrasonic clamp-on flowmeters, based on transit time method of measurement, suitable for liquids and gases. With ultrasonic clamp-on meters you do not need to stop the process.
USCXseries offers easy installation with own wizard for correct installation.

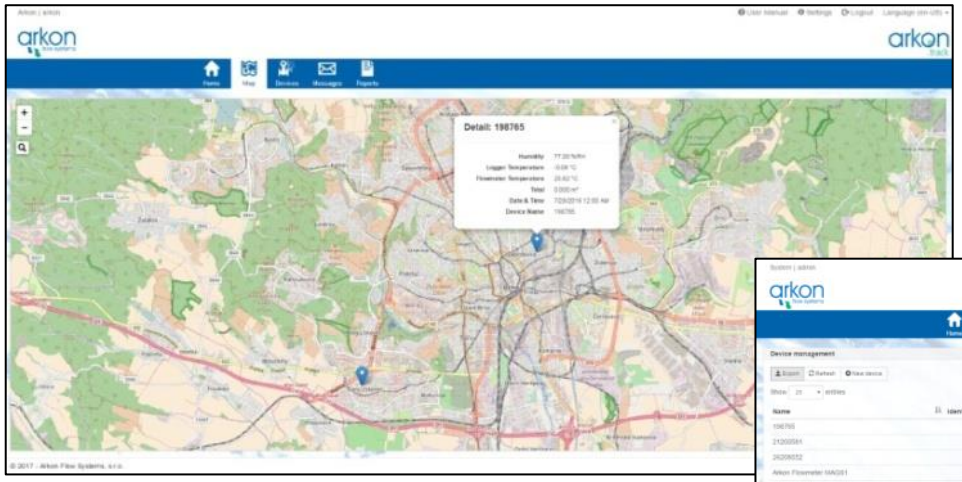
Various models and modules offers solutions for one channel, two channel pernament installations or portable device for on site maintance and control RS232, RS485, Modbus-RTU and HART compatible output. It is possible to use for heat measurement (thermal energy) in combination with temperature sensor.

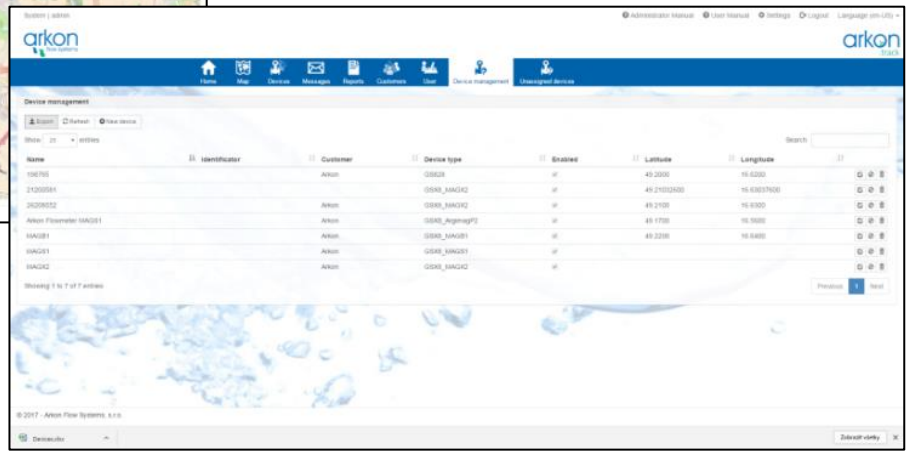
Suitable for pipes up to 3000mm.

Accuracy of volume flow:
±1 ... 3 % of measured value depending on application ±0.5 % of measured value with process calibration

VI. Telemetry software

Allow any user to install a monitoring station anywhere in the world regardless of any constraints over power, signal or planning issues.





arkon.track

Main projects and installation references

Water distribution, Vietnam, 2018

Farming industry, Chile, 2020

Water Monitoring, Bahrain, 2020

Water Treatment,
Czech Republic, 2017

Main projects and installation references

Water Distribution, Peru, 2019

Mining Industry, Chile, 2021

Water Management, Egypt, 2018

Cement plant, Peru
(Flume and MQU)

Markets and applications

Countries:

Australia, Bahrain, Chile, Colombia, Egypt, Finland, France, Greece, Indonesia, Iran, Iraq, Kuwait, Latvia, Mexico, New Zealand, Oman, Pakistan, Peru, Philippines, Poland, Portugal, Qatar, Saudi Arabia, Singapore, Sri Lanka, South Africa, South Korea, Taiwan, Thailand, Tunisia, Turkey, UAE, Ukraine, United Kingdom, USA, Vietnam

Most common applications:

Wastewater treatment, water treatment, Food industry, Chemical industry…

Certificates

Vojenský technický ústav, s.p.
Odštěpný závod VTÚPV
Víta Nejedlého 691, 682 01 Vyškov, Czech Republic

CERTIFICATE
N° VTÚPV - 002 / 2016

Applicant: Arkon Flow Systems, s.r.o.
Berkova 534/92, 612 00 Brno-Královo Pole, Czech Republic

Product: Electromagnetic Flowmeter

Model: MAGX2

Manufacturer: Arkon Flow Systems, s.r.o.
Berkova 534/92, 612 00 Brno-Královo Pole, Czech Republic

Rating and principal characteristics: Input Voltage: 90-250 V ; Frequency: 50-60 Hz; Power Output: max. 15 VA

Test results are described in the Test Reports No.:
194300-606/2015, 194300-607/2015, 194300-612/2015, 194400-133/2015
(issued by VTÚPV, Equipment Testing Section)

The sample of tested product conforms with the requirements of the following standards:

- EN 55011: 2009+A1: 2010, Group 1, Class B
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- EN 61010-1: 2010
- EN 61326-1: 2013, Chapter 6, Table 2

This certificate is valid until: 09.02.2019

Vyškov 09.02.2016

Milan Bezděk
Certification Head

CE Certificate: MAGX2

Vojenský technický ústav, s.p.
Odštěpný závod VTÚPV
Víta Nejedlého 691, 682 01 Vyškov, Czech Republic

CERTIFICATE
N° VTÚPV - 006 / 2018

Applicant: Arkon Flow Systems, s.r.o.
Berkova 534/92, 612 00 Brno-Královo Pole, Czech Republic

Product: Electromagnetic Flowmeter

Model: MAGS1

Manufacturer: Arkon Flow Systems, s.r.o.
Berkova 534/92, 612 00 Brno-Královo Pole, Czech Republic

Rating and principal characteristics: Voltage 230 V AC, Phase Current 100 mA; Weight 17 kg
Dimensions 250x220x375 cm

Test results are described in the Test Reports No.:
7240-037/2012, 7240-060/2012, 7240-061/2012
(issued by VOP CZ, s.p., Czech Republic, accredited testing lab. No. 1103)

The sample of tested product conforms with the requirements of the following standards:

- EN 55011: 2009
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- EN 61326-1: 2013

This certificate is valid until: 14.03.2021

Vyškov 14.03.2018

Milan Bezděk
Certification Head

CE Certificate: MAGS1

Vojenský technický ústav, s.p.
Odštěpný závod VTÚPV
Víta Nejedlého 691, 682 01 Vyškov, Czech Republic

CERTIFICATE
N° VTÚPV - 012 / 2015

Applicant: Arkon Flow Systems, s.r.o.
Berkova 534/92, 612 00 Brno-Královo Pole, Czech Republic

Product: Battery Powered Electromagnetic Flowmeter

Model: Agrimag

Manufacturer: Arkon Flow Systems, s.r.o.
Berkova 534/92, 612 00 Brno-Královo Pole, Czech Republic

Rating and principal characteristics: Voltage 9 V (6xAA Battery Powered); Weight 2 kg
Dimensions 190x130x190 cm

Test results are described in the Test Reports No.:
7240-038/2012, 7240-044/2012

The sample of tested product conforms to the EMC requirements of the following standards:

- EN 55011: 2009
- EN 61326-1: 2006

This certificate is valid until: 26.01.2018

Vyškov 26.01.2015

Milan Bezděk
Certification Head

CE Certificate: Agrimag

WRAS
Water Regulations Advisory Scheme

Yours faithfully

WRAS Approval

Certificates

CERTIFICATE

B-32-00337-16

IP68 Certificate MAGX2

Bureau Veritas Certification

Arkon Flow Systems, s.r.o.

ISO 9001:2015

ISO Certificate

CERTIFIKÁT / CERTIFICATE

B-00816-23

IP68 Certificate MAGB2

СЕРТИФІКАТ
ПЕРВІРКИ ТИПУ

Type Examination Certificate – Ukraine

Certificates


Czech Metrology Institute

OIML BASIC CERTIFICATE OF CONFORMITY

OIML MAGX2


Czech Metrology Institute

OIML BASIC CERTIFICATE OF CONFORMITY

OIML MAGB2


EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/17 - 5502

MID MAGX2


OIML CERTIFICATE ISSUED UNDER SCHEME A

MID MAGB2

Arkon Flow Systems, s.r.o.
Nováčkova 11, 614 00 Brno
Czech Republic
Tel: +420 543 214 822
Fax: +420 543 215 249

Sales / General: arkon@arkon.co.uk
Logistics: office1@arkon.co.uk
Technical support: support@arkon.co.uk

Arkon Middle-East & Asian Regional Office
Villa 11, Al Hoora
Kingdom of Bahrain

E-mail: middle-east@arkon.co.uk

Arkon Flow Systems Asia PVT LTD
44/7 Malani Bulathsihala RD
Bellanwila
Boralesgamuwa 10290, Sri Lanka

E-mail: middle-east@arkon.co.uk

arkon flow systems

www.arkon.co.uk

Thank you for your attention

Arkon Flow Systems, s.r.o.
www.arkon.co.uk