



AGREUS[®]

Wireless measurement and control
for Horticulture and Agriculture

ABOUT SYSTEM

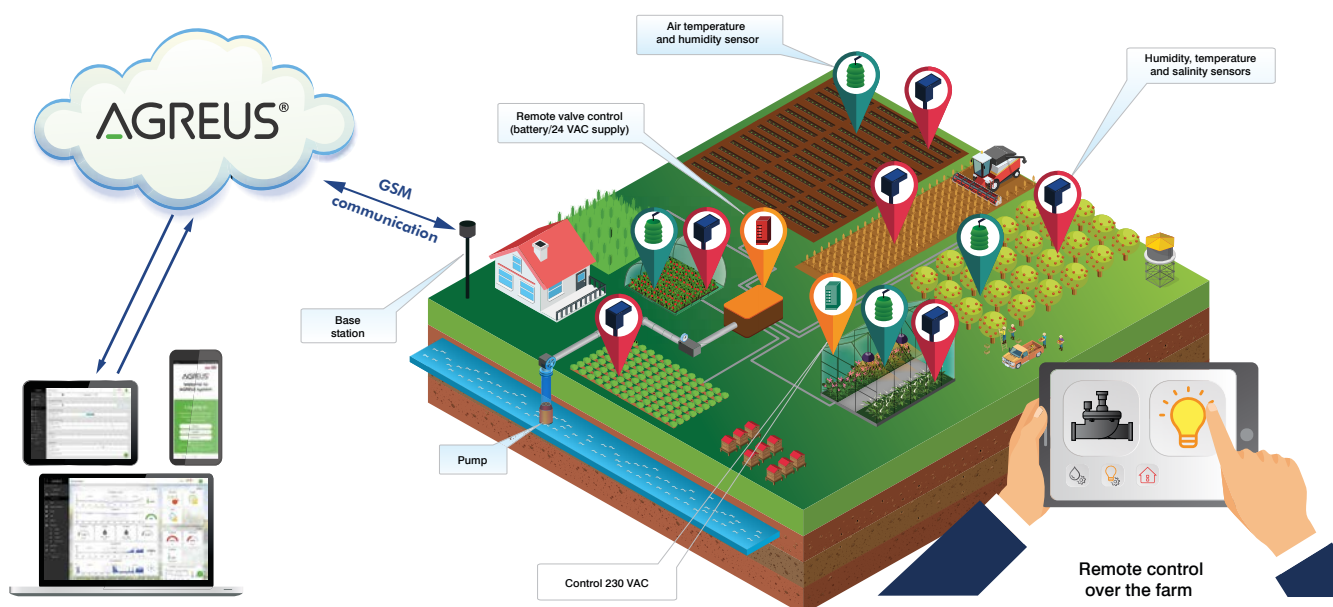


AGREUS® is a wireless system of the Smart Village class that enables the acquisition of measurement data facilitating agrotechnical decision-making and control. The system includes dedicated sensors and executive modules as well as an application available on both desktop computers and mobile devices, such as laptops, tablets or smartphones.

AGREUS® – the result of combining Inventia's many years of experience in the field of wireless data transmission technologies with knowledge in the field of precision agriculture, acquired as a result of cooperation with the Irrigation Laboratory of the Agroengineering Department at the Institute of Horticulture - National Research Institute in Skierniewice.

AGREUS® – a comprehensive solution useful in agricultural, horticultural or forest crops, green areas, orchards and crops under cover. Simple installation and operation is possible with the remote access to a dedicated web application. Configurable alarms sent as SMS or e-mail allow 24-hour-lasting, autonomous supervision over monitored crops.

REMOTE CONTROL OVER ALL CROPS



SYSTEM ELEMENTS

Communication between the base station – the heart of the AGREUS® system, and the sensors is carried out via the Semtech LoRa® wireless radio network. This technology, depending on the terrain and the height level at which the base station is assembled, allows to cover a large area of crops with low energy consumption, which is crucial for battery or solar powered devices.

BASE STATION AGB-2000



The base station provides wireless transmission between the AGREUS® system modules and the cloud portal. It is weatherproof (IP44) and equipped with two external antenna connectors – GSM and LoRa® – for improved coverage.

HUMIDITY, TEMPERATURE AND SALINITY SENSORS AM-100



Wireless solar powered sensor that measures soil moisture, salinity and temperature on one or three measurement levels simultaneously. Allows for intelligent control irrigation schedules.

AIR TEMPERATURE AND HUMIDITY SENSOR AM-200



Wireless sensor for remote monitoring of temperature, air humidity and leaf wetness time. Estimates the likelihood of fungal infections.

CONTROL VALVE AM-401



A radio module with two outputs enabling remote switching on and off of connected devices, e.g. it supervises the control of pumps, windows and doors, fans and roller shutters. Galvanic isolation of used parts.

REMOTE VALVE CONTROL 24 V AC AM-411



Radio module powered by 24 V AC voltage, which controls independently four solenoid valves. Possibility of automatic adjustment of predetermined irrigation schedules based on rainfall and soil moisture.

REMOTE VALVE CONTROL 9 V DC AM-421

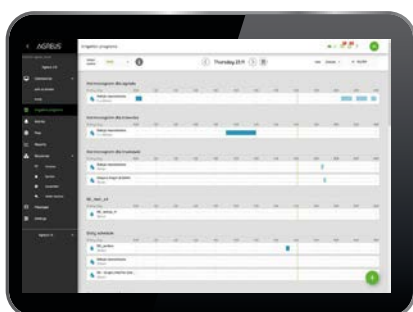
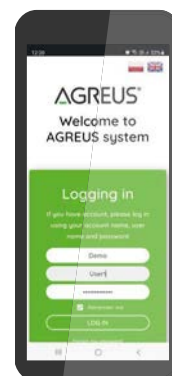


A battery-powered radio module that independently steers the four valves. It is used to control irrigation in accommodation without power supply. It is possible to automatically adjust predetermined irrigation schedules based on rainfall and soil moisture.

APPLICATION

Review www.agreus.pl

The AGREUS® portal is available all over the world via a web browser or a mobile application dedicated to Android devices. After creating an account, the User can customize the appearance of the application to his needs by defining his own desktops and widgets.



WATERING MANAGEMENT

AGREUS® is an advanced control system in which the User can freely create expanded irrigation programs to maintain optimal soil moisture in the plant root zone. The unique feature of the system is the ability to create valve groups as well the plan of unlimited number of schedules. The initiation of irrigation may depend on the actual soil moisture values being measured by the probe.

MONITORING OF CLIMATE PARAMETERS

AGREUS® provides information on many climatic parameters, such as: air temperature, dew point temperature, wet bulb temperature, relative air humidity, insufficient air humidity, insufficient water vapor pressure, length of leaf wetness, as well as the probability of disease infection. The above information makes decisions easier for the User to undertake agrotechnical work like: to neutralize the effects of frosts or the need to apply plant protection.



MEASUREMENT OF SOIL PARAMETERS OR GARDENING SUBSTRATES

The precise measuring probes are the main system elements. They measure the temperature, moisture and salinity of the soil or potting mixes on one or three levels together. The unique property of the probes is monitoring the electrical conductivity of water contained in soil pores (EC_w). This parameter allows to estimate the mineral content of the soil (MCI), which determines the total content of dissolved mineral compounds per unit of its volume (g/l). Information on soil moisture allows to select the optimal dose of water and the frequency of irrigation for each type of crop. These parameters are extremely helpful for precise irrigation, sprinkling fertilization and fertigation.