DREAM 2

Professional Internet enabled central controller for multiple irrigation heads

GOLDTEC CONTROL SYSTEMS

The ***DREAM 2*** is the next generation of central control systems. It allows combining various technologies to suit each projects specific need.

It is an **Internet enabled controller** so the use can control everything from a **PC or Smartphone.**

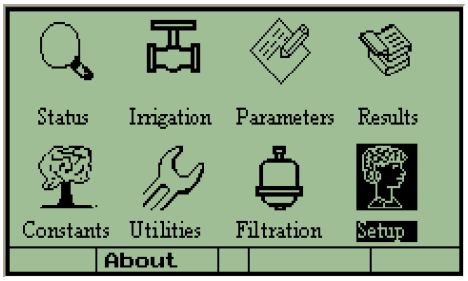
The ***DREAM 2*** can handle multiple irrigation heads allowing the user to manage medium to very large projects with many irrigation lines using a single controller.

Dream 2 - Features Description

Flexible hardware construction

- Local outputs DC or AC constructed from boards of 16 outputs/ 8 inputs
- Several RTU channels of the following types:
- 2 wired modular RTUs with up to 60 units per channel. 2,4,6,8 outputs, 4 or 8 inputs selectable per RTU
- License exempt radio controlled modular RTUs with up to 60 units per channel. 2,4,6,8 outputs, 4 inputs selectable per RTU
- Modules for remote expansion of I/O channels
- Up to 250 outputs and inputs connectable

Comfortable programming



- Large graphical LCD with back illumination for good day and night visibility
- Full numeric key pad that serves also for direct jumping into important subjects
- Position dependent Function Keys
- Special keys for movement inside and between screens
- Built in bilingual software. Switching languages by a single key stroke

General features

- Handling multiple irrigation lines
- Flexible and user changeable network definition
- A large pool of irrigation programs, each program contains the sequence of participating valves, water and fertilizer dosage, operation timing and conditions
- Valves can be irrigated individually or in groups defined as library groups or single use groups
- Handling various water sources
- Cyclical irrigation with constant cycle of days or RUN LIST based. Cycles within the irrigation day, with large number of repetitions, intervals specified in hours: minutes: seconds.
- Irrigation by Soil Moisture, Rain Accumulation and Evapotranspiration.
- Flushing automatic filters by time and/or by pressure differential
- Conditions for starting, stopping, waiting and continuing programs, based on sensors' statuses, flow rates, states of system components etc. the conditions can be combined by OR/ AND connections
- Detailed events report with date and time stamps, can be scanned by various categories
- System STOP TIME or individual stop time per program may force operation stop at a desired time
  Protection and alarming mechanisms detect problems in the irrigation system, in the water
- supply, in the fertilization system, in the filtration, and in the control system itself
- Optional satellite outputs and optional grouping of inputs
- Accumulation of water and fertilizers, including special accumulation of last irrigation
- Main valves operation- delayed, advanced or simultaneously with the irrigation valves
- Battery backup for the memory of the variable data
- Special tools for the dealer to enable / hide features according to the specific needs, to set up default values, to define the resources allocation

Fertilization

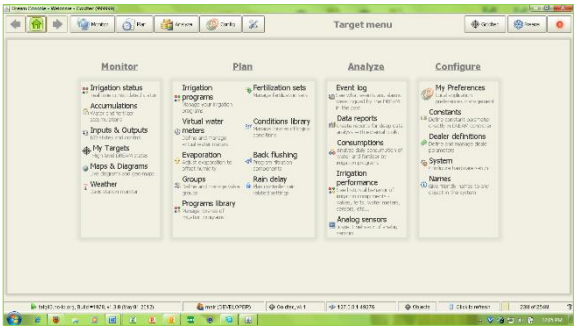
- Handling two types of fertilization sites, local sites which serve individual irrigation lines, and central sites that serve multiple irrigation lines
- Fertilizing in three stages: pre-watering, fertigation and post-watering
- Fertilizer dosage modes:
  - Continuous - Time (h:m:s), Volume (liters)
  - Concentration – L/m³, L/min:sec, sec/min, min:sec/L
  - Proportional - proportion calculated from amount of water and fertilizer.
- A special "water before" value for the first local fertilizer, separately from the other fertilizers
- Handling fertilizer injectors with and without fertilizer meters
- Handling booster pumps of venturi injectors

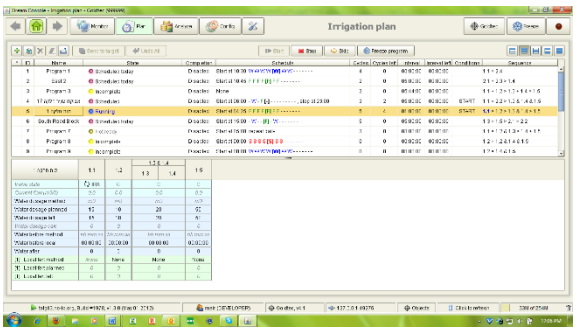
Weather station

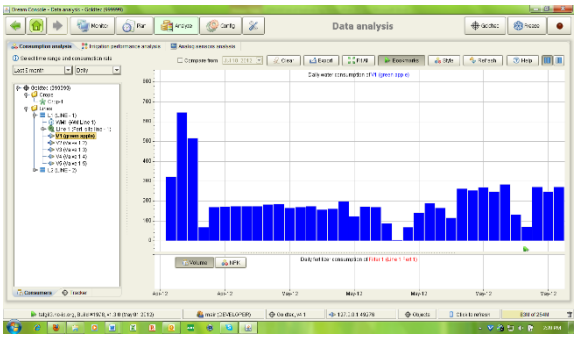
- Fully integrated weather station
- The Dream Weather Station features the following sensors
  -- Evapo-transpiration --- Solar Radiation --- UV Radiation --- Barometric Pressure
  -- Temperature --- Humidity --- Dew Point --- Wind Speed --- Wind Direction
  -- Daily Rain -- Rain Rate
- Rain delay feature with its own designated screen
- Evapo transpiration (ET) feature with its own designated screen
- Frost Protection feature with its own designated screen.

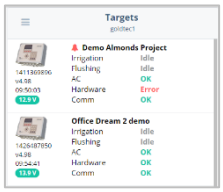
Communication

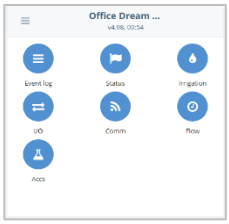
- New PC software, Java based-DREAM CONSOLE. Simple to use, powerful and modern.
- Smartphone application- DREAM SPOT. From any device on any application.
- Communication channels: Netstick, 3G modem, Ethernet cable, radio, cable.
- Email alarm notifications.

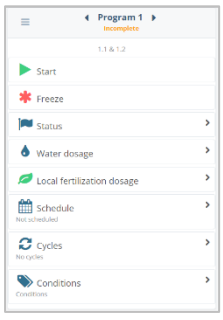


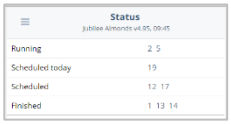


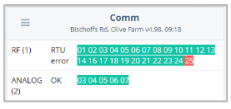


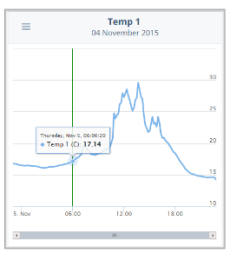












2- wire single cable RTU system (decoder)

The 2 wired single cable system offers a solution for controlling highly distributed irrigation systems, utilizing **R**emote **T**erminal **U**nits connected to the control unit by a single 2 wired cable.

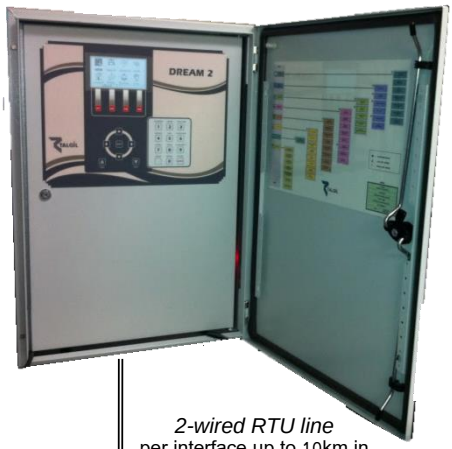
Remote valves and distant meters located in a radius of up to 10Km can easily be reached. Being DC operated and activating energy saving latching solenoids makes it possible to be powered either by standard electric source or by solar energy.

The energy to the RTUs is supplied from the center via the 2 communication wires. There are modular RTUs, compact RTUs & molded RTU's.

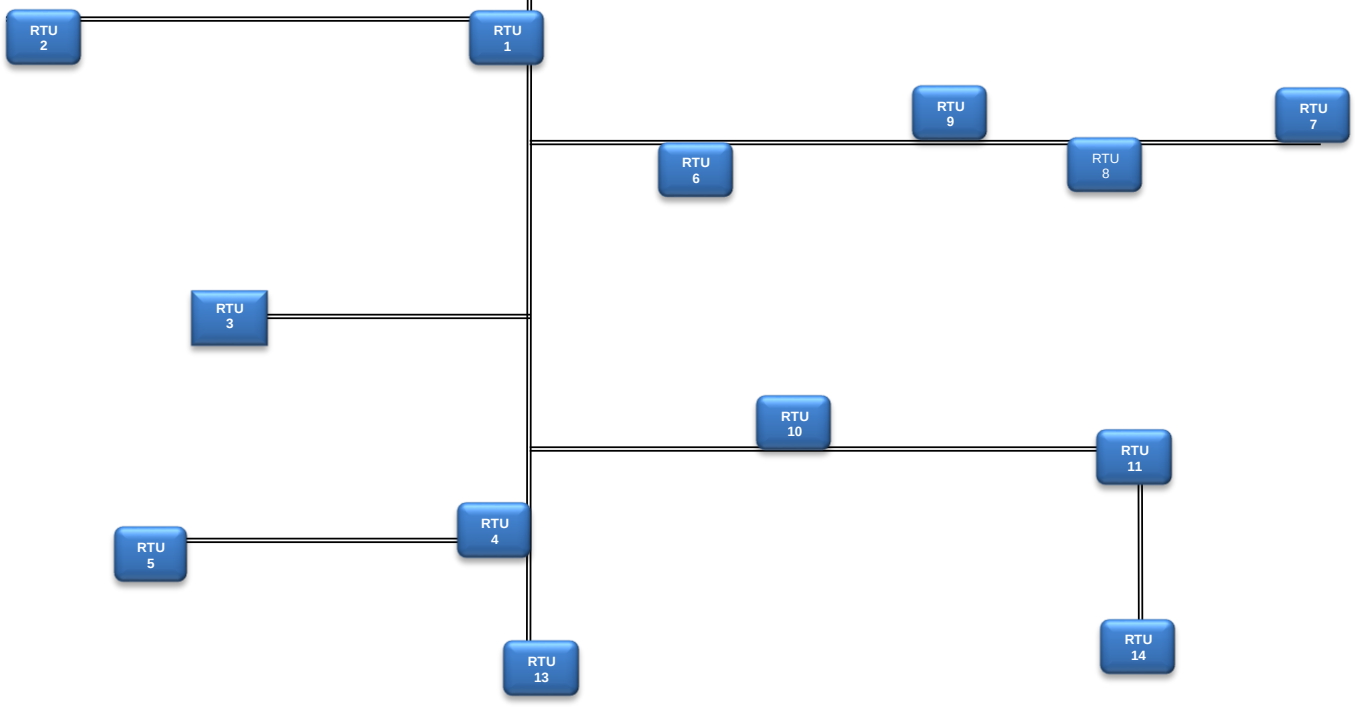
The modular RTU has a maximal capacity of 8 outputs and 8 digital inputs. The compact RTU offers an economical solution in places where the number of outputs and digital inputs does not exceed 2.

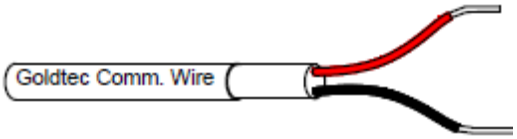
Optionally analog inputs may be defined in place of digital ones, up to 4 in the modular unit and up to 1 in the compact.

All the RTUs incorporated in a system are scanned second by second.



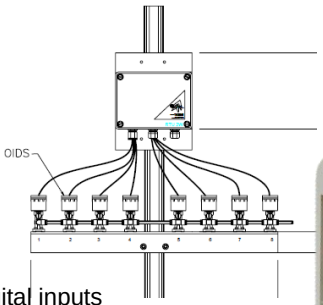
2-wired RTU line
per interface up to 10km in length





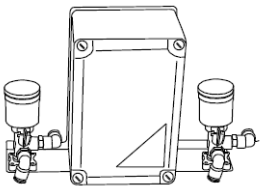
Features of modular RTU

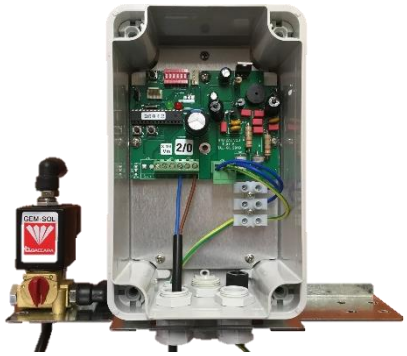
- Modular structure with plug-in I/O boards
- No. of outputs -2,4,6,8
- No. of digital inputs- 4,8
- No. of analog inputs 0-4, each analog replaces 2 digital inputs



Features of compact RTU

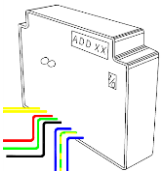
- Flexible structure allocated by software
- No. of outputs – 1,2
- No. of digital inputs- 1,2
- No. of analog inputs 0,1 the analog replaces 2 digital inputs

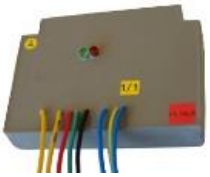




Features of molded RTU

- Flexible structure allocated by software
- No. of outputs – 1,2
- No. of digital inputs - 1





Common features

- Up to a total of 63 units per channel
- Visual and sound signaling of statuses by LED and buzzer
- Buzzer can be turned off for energy saving purposes
- Including I/O test modes
- Scanning rate of 1 second per the whole system
- Built in lightning protection

Radio RTU system (decoder)

G5 Radio RTU – the next generation: The G5 RADIO RTU system was launched in 2018, it is based on all the accumulated experience in TALGIL of thousands of wireless systems installed and supported during about 20 years.

It has several major advantages over previous generations:

- Self-healing network – If an RTU loses communication to the master antenna, it will find an alternative route automatically.
- Automatic frequency selection – In case the frequency used by the system becomes too noisy due to interferences, the system will switch automatically to a different frequency.
- Communication retries – In case interference occurred exactly at a time an RTU was trying to communicate, the system will retry to send the message up to 3 times more.

The system is built from three main parts:

- Interface RF + Master antenna – Communicates with the controller unit on one side and with the G5 RTUs on the other side.
- RF RTU – The RF RTU (**R**emote **T**erminal **U**nit) is basically a small simple controller that performs whatever the Interface RF tells it to.

Each RF RTU is capable of:

- Controlling:
  - Pumps
  - Valves
  - Fertilizer injectors
  - Filters
- Monitoring:
  - Water meters
  - Fertilizer meters
  - Water floats (Reservoirs and tanks)
  - Pressure sensor
  - Differential pressure sensor
  - Analog sensor – Temperature, humidity, tensiometers, radiation, CO2, water level and etc..

The maximum range between the controller and the furthest RTU is 3km (with line of sight). The G5 is capable of 10 levels of repetition, which means a single RF Interface can control & monitor elements in a 30km radius!

Each Interface RF is capable of communicating with up to 600 RF RTUs. The communication with all the RTUs is done every couple of seconds (Depending on the number of RTUs)

Energy options:

- 4 X “D” type alkaline batteries – Modular RTUs
- 4 X “C” type alkaline batteries – ECO RTUs
- 10W solar panel + 12V 1.3Am/hr rechargeable battery (For units with analog inputs)

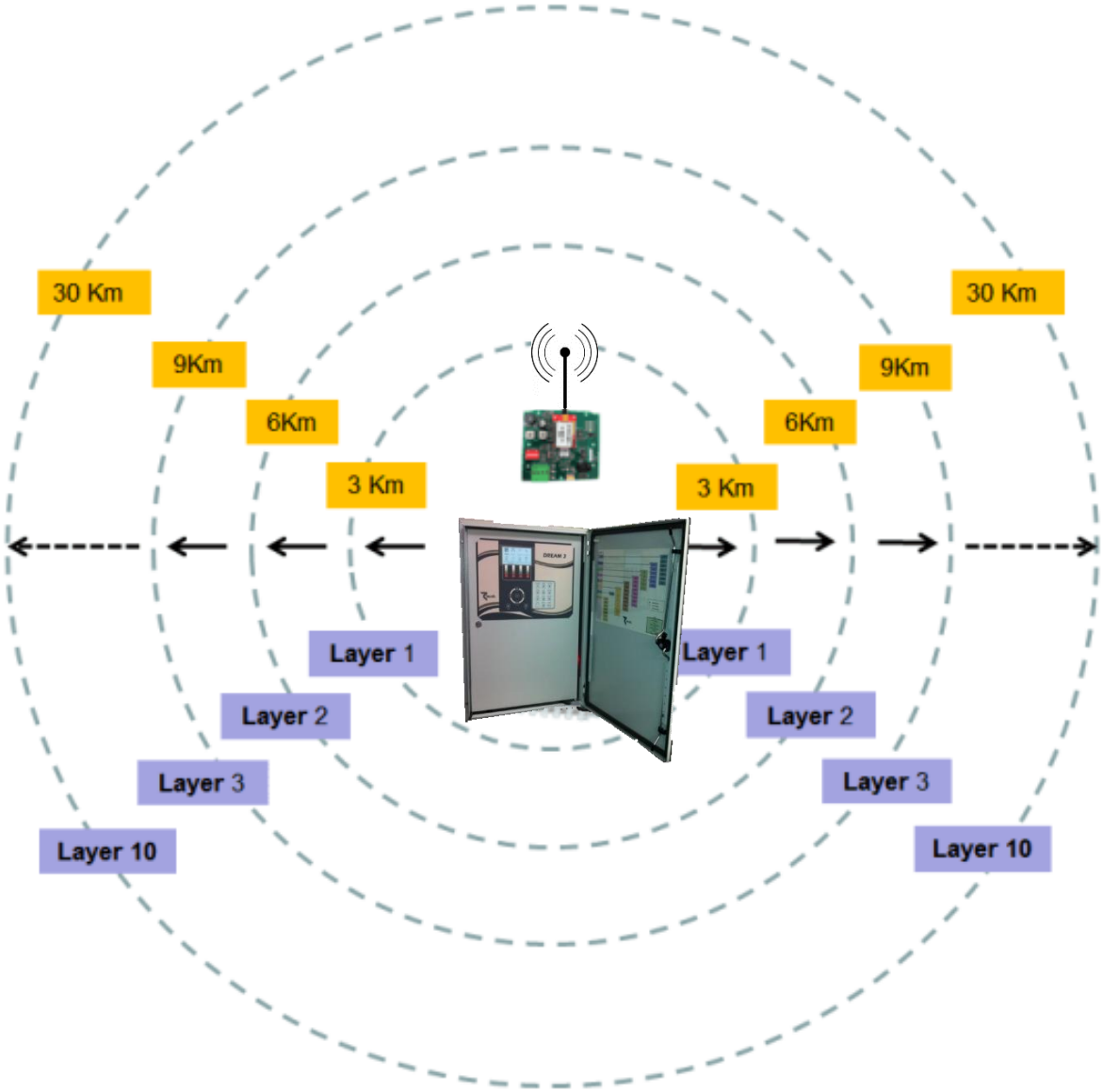
The RF system uses the ISM bands (433 / 868 Mhz) and a 10mW transmission power and therefore it is a LICENSE FREE SYSTEM. The outputs can control 12V DC latch solenoids.

There are several RTU RF models:

- RTU RF ECO – An Economical non-modular solution, to be used where devices in the field are far away one from another and future expansion in not likely.
  - 1 Output / 1 Input / 2 analog input (4-20mA / 0-5V)
  - 2 Outputs / 2 Inputs / 2 analog input (4-20mA / 0-5V)

- RTU RF MODULAR – A modular solution, to be used where devices are grouped together or a future expansion is possible.
  - 2/4/6/8 outputs
  - 0/4/8 digital input
  - 0/2/4 analog inputs (4-20mA/ 0-5V, SDI–12)

Programing is done easily by using the mini rotary switches (Besides an RTU with analog inputs, which requires a connection to a PC / Laptop)

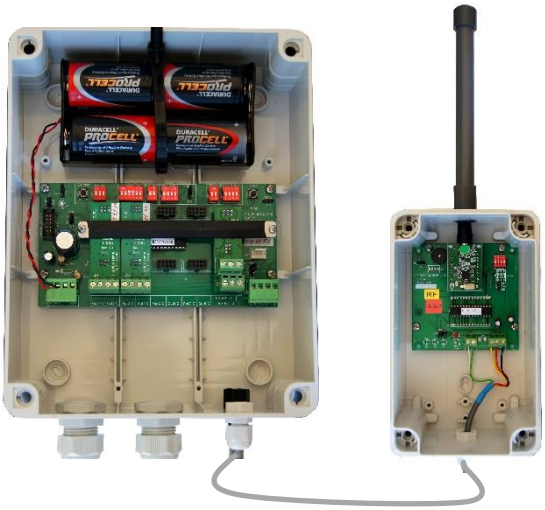


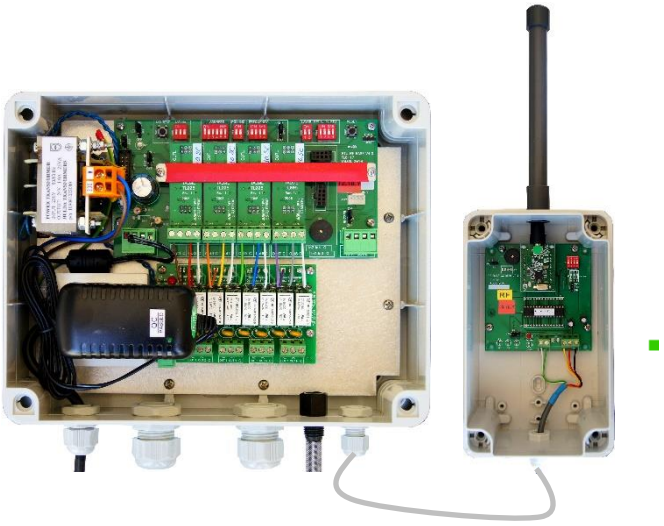
The generation G3, G4, G4.5 RTU RF models will continue to be available:

These generations are offered in the following configurations, will offer 3km line of site and can repeat a further 3km for 6km in total.

- RTU RF ECO – An Economical non-modular solution, to be used where devices in the field are far away one from another and future expansion in not likely.
  - 1 Output / 1 Input
  - 2 Outputs / 2 Inputs

- RTU RF MODULAR – A modular solution, to be used where devices are grouped together or a future expansion is possible.
  - 2/4/6/8 outputs (12v Latch or 24vAC)
  - 0/4/8 digital input
  - 0/2/4 analog inputs (4-20mA/ 0-5V, SDI–12)





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