Data Sheet

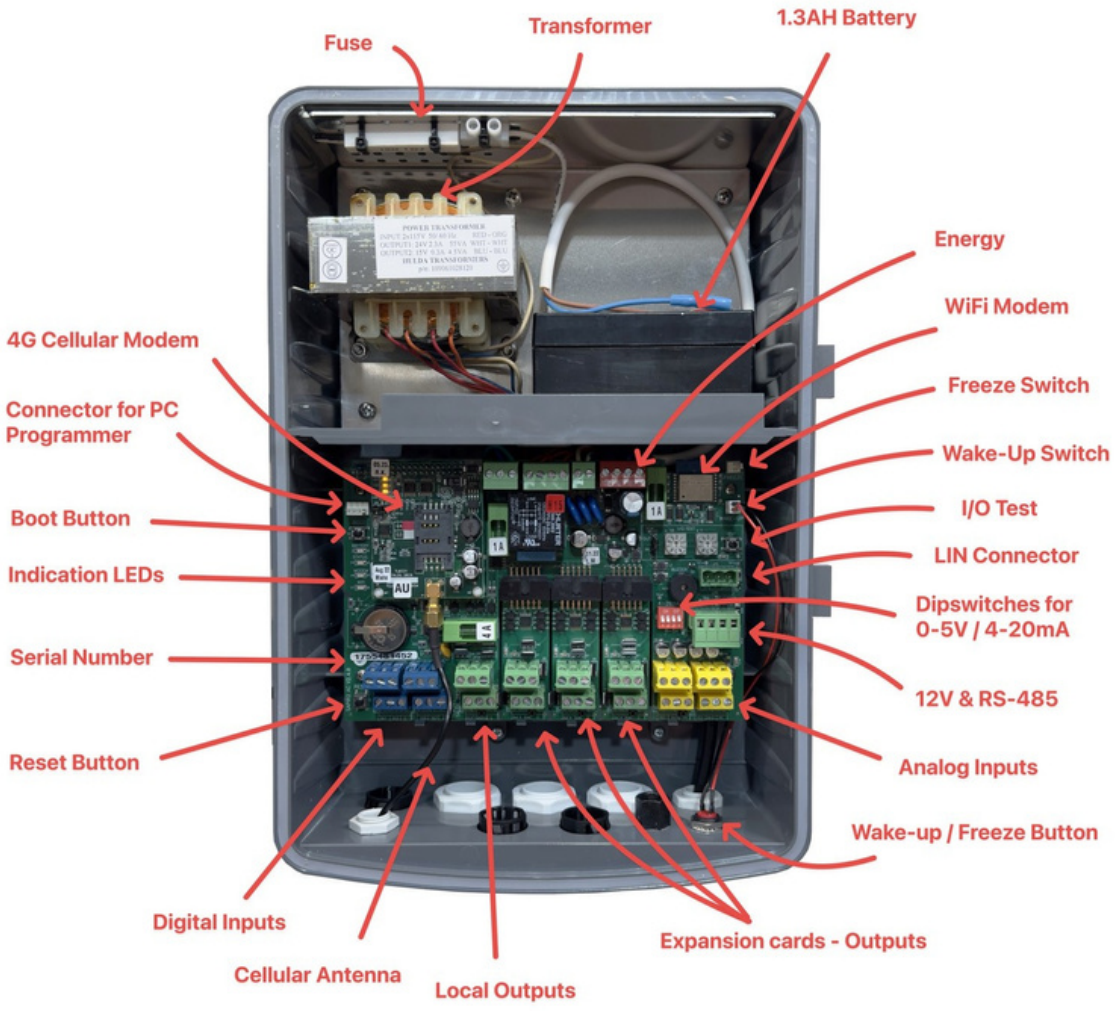
Talgil - Sapir 2 - Advanced Irrigation Controller

Description: Sapir 2 - Advanced Irrigation Controller
Product Code: TG-SAPIR2

National Service and Supply Centre
35 Wakefield Street, Alicetown 5010
www.deeco.co.nz

Product Description

The SAPIR 2 is the next generation of central control irrigation systems. It allows combining various technologies to suit each project's specific needs.
It is an Internet-enabled controller so the user can control everything from his PC or Smartphone.
The SAPIR 2 is the perfect solution for small to medium irrigation projects with a single irrigation head, suitable for both simple and most demanding applications.



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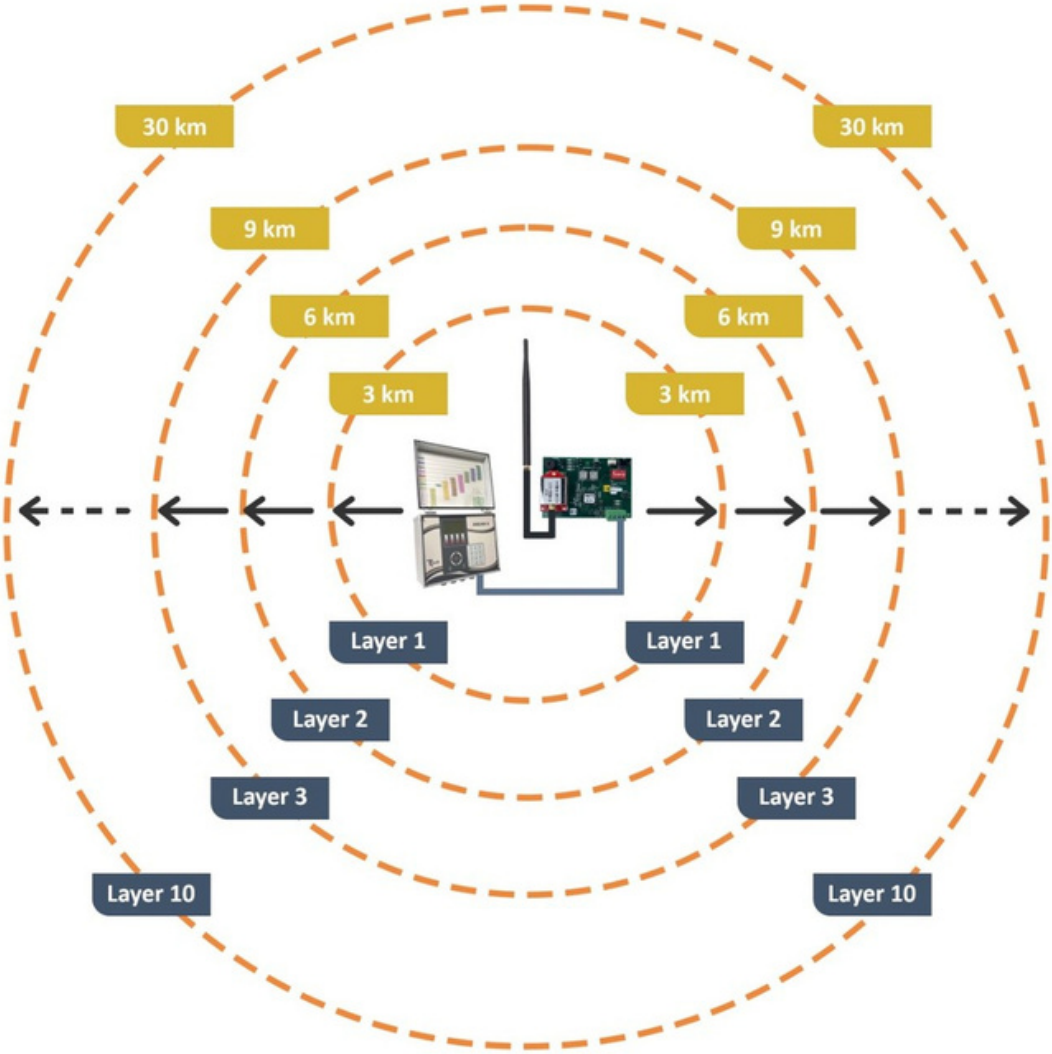
Features and Benefits

Modular & Flexible Hardware

- Maximum 32 outputs - Can be divided between local and radio RTU
- Local on-board:
- Modular 4/8/12/16 Outputs - 12V DC Latch or 24V AC
- 8 Digital Inputs - Water meter, fertilizer meters, DP, water level float etc.
- 4 Analog Inputs - Pressure Sensor, ultrasonic water meter, soil moisture etc.
- Radio RTU - License free, up top 3km (30km with repeaters)



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Irrigation:

- Up to 16 irrigation programs
- Water dosage by Time, Volume, Volume per area and ET
- Irrigation by days of the week or cycle of days
- Single-cycle or pulse irrigation
- Start: By time, condition, manually
- Flexible programming - Valve by valve, groups by group or a combination of both.
- Main valve operation delayed, advanced, or together with the irrigation valves.

Fertilization:

- Up to 4 fertilizers and booster control
- Fertilization modes: Time (hh:mm:ss), Volume (Litres), Concentration (L/m3) and Proportional volume.
- Three-stage fertigation: Pre-watering, injection, and post-watering

Backflush:

- Flushing by time, by DP or both
- Definable parameters: Flushing interval, Pre dwell time, Dwell time, Flushing time, PD delay.
- Endless looping detection and prevention.
- Accumulation of flushing cycles by time and by PD.

Alarms:

- High flow, Low flow, Water leakage, Low pressure
- Fertilizer leakage, No pulses from fertilizer injector
- PD sensor failure
- Low battery, No AC

Communication:

- Smartphone application – Dream Spot. From any device on any operating system.
- Wi-Fi, 4G Modem
- Push alarm notifications to user's phone
- Remote firmware upgrade (OTA).

Full integration, monitoring, and command of:

- **Water Systems - Water sources – 1**
  - Pump - On/Off Control (Including duty selection), Mainline Pressure Monitoring, and Pump/System Faults.
  - Solenoid Field Valves - On/Off Control, High/Low Water Flow, Water Usage.
  - Flow Meter - High/Low Water Flow, Water Usage (per Zone/Meter/Specified Area), Leak/Burst Alerts.
  - Tank/Dam Level - Including automatic filling. With volume optimisation based on resource consent limitations.
  - Spray/Stock/Domestic Water - On/Off Control of Pump, High/Low Water Flow, Water Usage, Leak/Burst alerts.

- **Frost Systems**
  - Automated frost protection system triggered by temperature sensor or switch.

- **Filtration Systems**
  - Backwash Valve control, Pressure Differential monitoring.

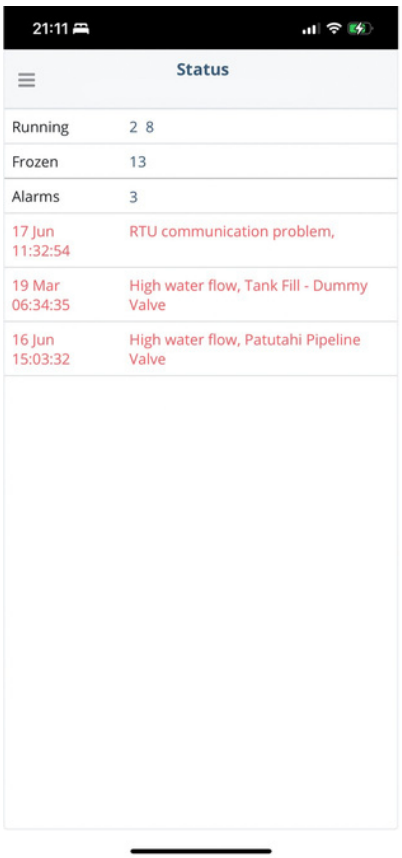
- **Fertigation Systems**
  - pH / EC, fertiliser meters, proportional dosing, bulk/time injection.

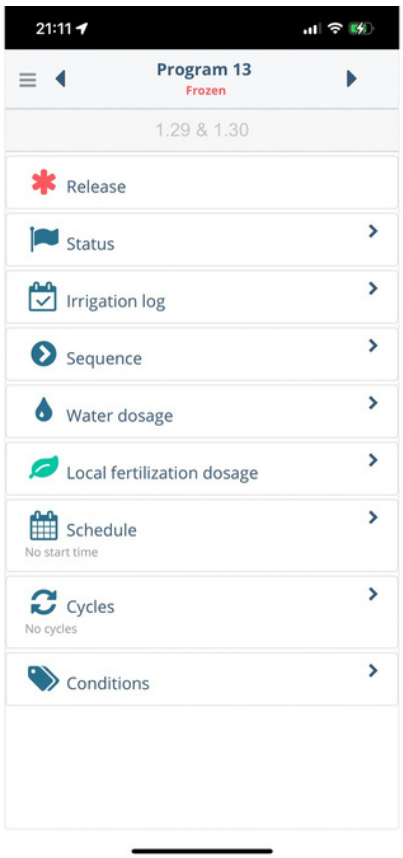
- **Waste Water**
  - Waste Water disposal via irrigation based on tank/ pond level, Tank Level monitoring, and pH level monitoring.

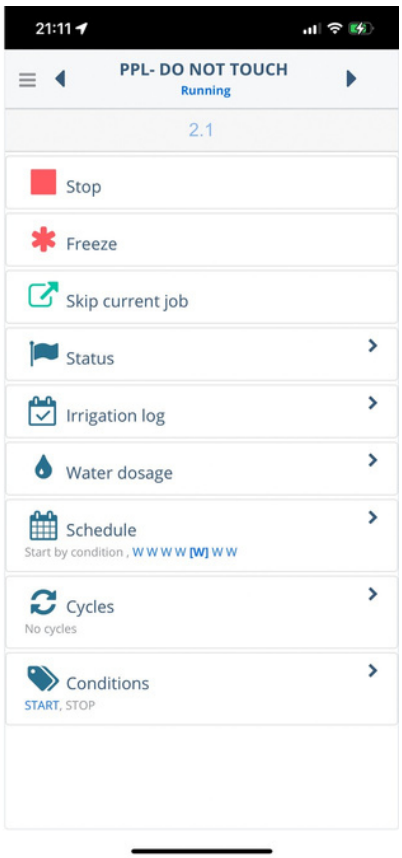
- **4-20mA, 0-5V, SDI Sensors and Weather Stations**
  - Including soil moisture, air temperature, complete weather stations and many more.
  - Automated irrigation based on soil moisture sensor thresholds or ET

Additional Features and Accessories

- Advanced Mobile Software - Spot App
- Powerful Analytical Tools
- Wi-Fi - Local connection
- Modular hardware
- API ready – communicates with all 3rd Decision-making systems
- and much more!







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Typical Applications

- Monitoring, analytical planning, and irrigation control tools
- Monitoring/controlling climate and other environmental parameters
- Providing farms in remote areas with remote control over cellular communication

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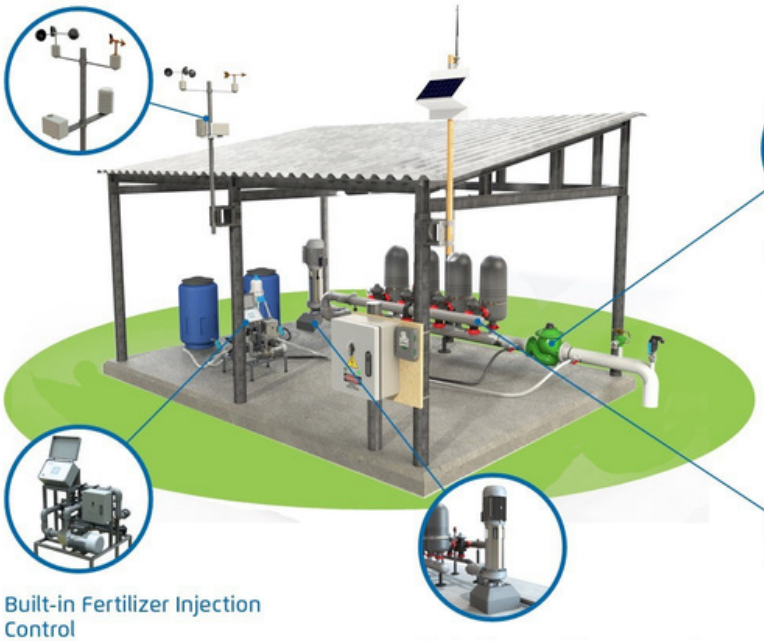

Irrigation Control

- Versatile programs, methods and scheduling
- Single, group and sequential valve operation

Built-in Fertilizer Injection Control

- Local and centralized injection sites with up to 6 injectors per site
- By volume, by concentration or proportional fertilization with pre-water, injection and post water control
- pH and/or EC control in each site

Water Sources Management

- Reservoirs
- Pump stations
- Single or multiple wells

Filtration Control

- Local and centralized filtration sites control
- Flushing by time, pressure differential or both, with full parameters control (intervals, flush time, delay times) and filtration faults control

Built-in Monitoring Capabilities

- Monitoring a wide range of environmental parameters
- Logging and storing data in the Cloud and in the farmer's database

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Technical Specifications

- Construction Materials: UV Resistant ABS
- Temperatures: Ambient: -17 to +60°C; Storage: -30 to +70°C
- Protection Rating: IP67, NEMA X4

Configuration Options

Primary Feature	Secondary Feature	Accessories	SAPIR2 Controller		DREAM2 Controller	
			AC/DC	Radio	AC/DC	Radio
Form of Irrigation	Time		Y	Y	Y	Y
	Volume		Y	Y	Y	Y
	SMART Control	Weather Station	Y	Y	Y	Y
		Sensors	Y	Y	Y	Y
		Flow Monitoring	Y	Y	Y	Y
		Pressure Monitoring	Y	Y	Y	Y
		E.T	Y	Y	Y	Y
		Volume / Area	Y	Y	Y	Y
Output Type (Valves, Pumps, etc...)	AC		Y	Y	Y	Y
	DC (LATCH)	Radio	N	Y	N	Y
		Controller Direct	Y	N	Y	N
Input Type (Sensors, Water Meters, etc...)	Local	Dry Contact	Y	Y	Y	Y
		Analog	Y	Y	Y	Y
Power Source	220VAC		Y	Y	Y	Y
	Solar + Battery		Y	Y	Y	Y
Cloud Control - PC Software			Y	Y	Y	Y
Cloud Control - Mobile App			Y	Y	Y	Y
Number of OUTPUTS			4-32	4-32	16-999	16-999
Number of Digital Inputs			8	8	8-999	16-999
Number of Analog Inputs			4	4-16	2-256	2-256

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Technical Data

Connectivity with the field's control components

- Connectivity with the field's control components:
  - Local AC or DC digital and analog I/Os
  - Radio RTU
    - RTUs with various digital, and analog I/Os

Connectivity with the Cloud

- 4G Cellular Modem or Local Wi-Fi connection

SAPIR2 Versions & I/O

AC version:

Can be powered directly from mains, using the internal 220V / 110V to 24V AC transformer and 1.3aH rechargeable battery.

DC version:

Can be powered via a 20W Solar panel and 1.3Ah rechargeable battery.

The DREAM2 has a very flexible hardware option, and therefore, there are many combinations for expanding the number of output/inputs / analog inputs in the system.

The SAPIR2 has a flexible hardware option, and therefore, there are many combinations for expanding the number of output/inputs / analog inputs in the system.

- **Outputs:**
  - The maximum number of outputs is 32

AC version – 24V AC solenoids
DC version – 12V DC latch solenoids

- **Digital Inputs:**
  - The maximum number of digital inputs is 32.
  - 8 Local inputs
- **Analog inputs:**
  - The maximum number of analog inputs is 48
  - 4 … Local analog inputs
  - 4-20 mA / 0-5V

Additional Outputs / Digital inputs / Analog inputs can be added using radio RTU.

Programming is done easily:

- Remotely via the internet using the SPOT App
- Remotely via the internet using the CONSOLE PC software.