# Ai1 / All-in-One System

## ALL-IN-ONE, RUGGED, REMOTE MONITORING



**Ai1 is a completely integrated all-in-one system for remote monitoring, supporting almost any sensor combination.**

Ai1 includes everything required to transmit sensor data direct to your fingertips, with industrial reliability suitable for critical systems. Fully programmable, high efficiency solar power system, online communications, and industry leading web-SCADA interface, providing power and flexibility at every level.

### All-In-One:

- All-in-one design eliminates on-site engineering, and simplifies installation, typically performed safely by 1 person in less than 1 hour
- Everything included providing plug & play operation: customizable weatherproof housing, integrated solar power and battery backup system, datalogger, indicator lights, integrated communications system with global web-SCADA subscription.
- Ai1 is fully programable and configurable with sensors able to be added at any time
- Versatile mounting system allowing mounting to almost any surface

### Industrial Grade Reliability

- A tightly integrated Campbell Scientific measurement module measures almost any sensor combination with versatile inputs supporting high accuracy (24-bit) analog voltages, 4-20mA current, pulse, frequency, and serial inputs (including multiple SDI12, Modbus, NMEA and RS232 ports).
- Fully programmable, supporting data concentration, event driven reporting, local control, intelligent power management, remote diagnostic tools and OTA (over-the-air updates), providing customization to suit any application or requirements and minimizing costly site visits

EXT power version: 136 x 169 x 169mm, 1.7kg
18W version: 257 x 239 x 169mm, 3.4kg
36W version: 231 x 231 x 270mm, 5.8kg



Externally powered version



Ai1 provides actionable information, streaming live to the secure web portal. Web site subscription included with global SIM option

## Inputs & Outputs

| | |
|---|---|
| Analog | 6 inputs, 24-bit resolution, -100 to +2500mV range, ±0.04% accuracy (0 to 40°C) |
| Digital | 7 configurable digital and pulse counting ports (high/low, pulse width modulation, switch closure, interrupts |
| Serial | Integrated USB port, full RS232 serial port, and 5V RS232 port as 2 x Tx, 2 x Rx or Tx/Rx pair. Supports SDI12 v1.4, NMEA, Modbus RTU, Modbus ASCII, DNP3 and custom serial protocols. Specify top or bottom USB port at time of order |
| Power | Program controlled power output (see power options) and dual analog excitation ports (+150mV to 5000mV analog output) |

## Communications

| | |
|---|---|
| Primary | Select from cellular, wifi or radio primary communications option all with integrated internal 2dBi antenna or optional external high gain antenna. Cellular: Global 3G with 2G fallback, or region specific 4G models. Wi-Fi: Client or access point operation. Radio: Frequency hopping spread spectrum radios with region specific models |
| Secondary | Optional Iridium 9602 satellite modem to backup primary communications method |
| Management | Management of communications connection through datalogger program for power optimization |
| Subscription option | Cellular and Wi-Fi models support Eagle.io connection. Eagle.io subscription included for global SIM option. Eagle.io provides alarms & notifications, public & private dashboards, historic charts/tables/data export, processing and logic and on-demand direct connection to the remote field site for program changes, firmware update and diagnostics |
| Protocols supported | PPP, RNDIS, ICMP/Ping, Auto-IP, IPv4, IPv6, UDP, TCP, TLS, DNS, DHCP, SLAAC, NTP, Telnet, HTTP(S), FTP(S), SMTP/TLS, POP3/TLS (depending on communications) |

## Power Options

| | |
|---|---|
| External -EXT | External power supply (10-18V, or 16-32V inputs), no internal battery or solar panels, switched power output |
| Solar -18W | 2x9W solar panels (18W total / east-west exposure), 7Ah lithium polymer battery, adjustable 5-20V switched sensor output |
| Solar -36W | 4x9W solar panels (36W total / four-sided exposure), 12Ah VR SLA battery, 12V switched sensor output |
| Protection | Panel mounted fuse (factory fitted with 2A fuse) for protection and on/off control |
| Operation | Current consumption typ <15mA (depending on sensor and communications). Idle current (no comms) 1.5mA @ 12V |

## Customization

| | |
|---|---|
| Sensors | External power supply (10-18V, or 16-32V inputs), no internal battery or solar panels, switched power output |
| Branding | 2x9W solar panels (18W total / east-west exposure), 7Ah lithium polymer battery, adjustable 10-18V switched sensor output |
| Mounting | 4x9W solar panels (36W total / four-sided exposure), 12Ah VR SLA battery, 12V switched sensor output |

## Customization

| | |
|---|---|
| Indicators | Inbuilt status LED indicators, externally visible. Blue LED available for program control |
| Housing | IP67 (NEMA 4X) before being modified for sensor mounting or cable entry |
| Clock | Battery backed internal clock ±1min/month. Execution rate from 0.1s to once/day. |



# xylem
## Let's Solve Water