



## SMARTGUARD

*is the next generation sensor and instrument HUB for ocean, lake, reservoir, estuary and river hydrometric stations.*

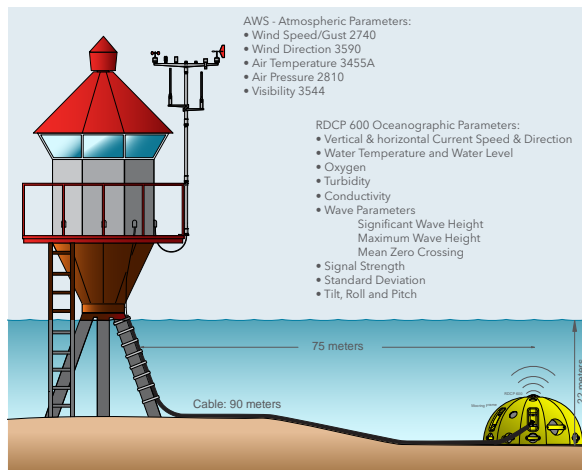
*Monitoring water and weather conditions is essential in many operations and the SmartGuard node is well suited for stand-alone stations powered by battery and solar power utilizing wireless real-time data communication.*

*Designed for ease of integration of new and existing sensor technologies into a single Aanderaa observatory node with modern self-describing XML data output formats.*

*SmartGuard interfaces with all Aanderaa atmospheric and in water sensors, along with most 3rd party sensors.*

### **SMARTGUARD advantages:**

- Great flexibility: Basic extended full versions handle air and water sensors
- Flexible easy configuration and setup using PC software
- Fully integrated with Aanderaa real-time system
- Full AiCaP Bus compatibility, including 150m string with up to 25 sensors
- Plug-n-play Aanderaa Smart sensor interfaces: O<sub>2</sub>, conductivity, temperature, pressure, water level, tide and current
- Aanderaa SR10 and VR22 meteorological sensor interfaces: wind speed and direction, temperature, RH, visibility, air pressure and more
- Interfaces for most 3rd party RS-232/RS-422 sensors, analog sensors, digital sensors
- XML data records with complete metadata; traceable and with status info on individual parameters
- Large onboard data storage capacity on a removable SD memory card
- External power supply 12- 30V internally regulated
- Up to 6 double ended analog sensor input (0-5V, 24 bit)
- Individual power control for attached sensors
- Low power consumption
- RS-232 communication port with controlled power supply for communication equipment
- Easy readable display and 6 key operator panel



#### SMARTGUARD versions:

Basic, Basic w/SR10, Extended, Extended w/SR10

#### SMARTGUARD capabilities:

- Up to 25 Aanderaa Smart sensors (AiCaP nodes) can be connected on an up to 150m string
- Up to 10 Aanderaa SR10/VR22 sensors (AADI Met and Full)
- RS-232/RS-422 for 3rd party serial sensors. Individual power control. Basic and Aanderaa Met: 1 (Extended and Full: 5)
- Analog input, 0-5V, differential, 24 bits. Basic and Aanderaa Met: 3 (Extended and Full: 6)
- Digital input, 1 Opto-isolated, 500 Hz, 1 non isolated, 0/10V, 5 kHz. Basic and AADI Met.:1 (Extended and Full: 2)
- Digital output: 2X 0/10V. Basic and AADI Met.:1 (Extended and Full: 2)
- RS-232 communication channel for modem and direct cable. Direct cable also RS-422
- USB for local PC operation
- LAN for remote operation and networking (socket)

#### Recording system:

- Multiple sensor groups with individual recording interval and activation
- Recording interval from 2s to 3 hrs. depending on attached sensors
- Data storage on SD card
- Binary format

#### Real-time communication:

- Aanderaa real-time protocols, XML
- Condensed and compressed for limited bandwidth
- Retransmission for noisy channels

#### Available telemetry options:

- LAN, Radio modem, GPRS, GOES, Iridium

#### Remote operation:

- Aanderaa real-time operator panel

- Device layout (adaptation to attached sensors etc.)
- Configuration
- Recording start/stop
- Status monitoring

#### Storage:

- ≤ 2GB
- Remote downloadable
- Exchangeable

#### Clock:

- ≤12s per month over temperature range

#### Power:

- 12 - 30V
- Sleep current < 1mA @12V
- Operating current <20mA @12V; depending on layout and configuration

#### Housing:

- 320x217x70mm
- Rugged aluminium box
- IP 65
- Designed for high EMC compliance

#### Operating temperature: -40 to +60°C

#### Optional Aanderaa sensors sub sea:

- Temperature 4060, 4880
- Conductivity 4319A/B
- Wave and Tide 4648, 4647A/B/C
- Pressure 4117, 4646A/B/C
- Turbidity 4112
- Oxygen Optode 4835/4330
- Doppler Current 4420, 4520

#### Optional Aanderaa sensors air:

- Wind Speed and Gust 2740
- Wind Direction 3590
- Air Temperature 3455
- Air Pressure 2810
- Solar Radiation 2770
- Radiation 2811
- Mira Visibility 3544
- Relative Humidity 3445
- Rainfall 3864
- Temperature 3444
- Road Condition 3565
- Road Temperature 3304

#### Enclosure and Mast hardware:

- Sensor Cross Arm 3415/3435
- Free standing base cabinet and 4m mast - 10m mast with guy wire and hand winch

#### Accessories included:

- Aanderaa Real-Time Collector, including operator panel and data viewer
- Aanderaa Data® Studio software
- SD card: 2 GB
- Documentation on CD



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