

# Technical Data

## A753 addWAVE UHF



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- Device type**  
 Compact data logger with integrated UHF modem
- Product highlights**  
 IP-67 ultra-low-power design, WMO compliant measurement methods, high analog resolution, large integrated memory (2MB = ~6 months of data for 15-minute-readings), 5-20km transmission range, repeater functionality
- Data transmission**  
 UHF radio (430-470MHz) with 500mW
- Sensor interfaces**  
 12 x analog 0...1/2,5VDC (3 channels also support 0...150mV); 4 pulse counters (2x 500Hz fast counters / 2x 50Hz counters); 4 digital I/O's (expandable with A553 to up to 52 digital I/O's); 40 SDI-12 values; Modbus via adapter

A753 addWAVE Series 4 is a powerful universal data logger that provides high analog resolution, many different I/O channels, lots of memory and extreme flexibility and expandability. It is nonetheless very easy to use and install, and has maintained the low-power approach of previous generations, perfectly capable of operating off our little solar panels. It is the perfect tool for professional users that want to establish and manage large scale measurement networks.

#### Mechanics:

Case	Aluminum, powder coated
Protection class	IP-67

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Dimensions / weight	160 x 60 x 80 mm / 1.200 gr.
Connectors for sensors and power	4 x M9 female 7-pin to sensor 1 x M9 female 5-pin to power Made in Germany by Binder Sockets: brass, nickel plated, with gold plated socket contacts; IP-67 protection class protective caps
Antenna connector	TNC with external seal, IP-67, Made in Germany
Mounting	Mast mounting bracket, integrated
Operating temp.	-30°C ... +75°C

Logger:	
I/O channels	60
Analog inputs	12 x 0...1V/2.5VDC (3 channels on Port C can be programmed to a measuring range of 0 - 150mV DC low temp. drift with internal amplification)
Digital inputs	40 x SDI-12 Values
Counter inputs	Total of 4 inputs: 2 for standard reed switches, debounced, e.g for rain gauges; max. 50 pulses per second. Min. pulse length 17ms, min. break time 17ms 2 for fast puls generators, e.g. wind speed sensors or flow meters; max. 500 pulses per second. Min. pulse length 1ms, min. break time 1 ms.
TTL In- / Outputs	4 x TTL compatible status inputs or switching outputs, programmable; of which 1 x 5V (Port A) and 3 x 3.3V (all others)
Analog resolution	16-Bit
Sensor excitation voltage	Programmable: - Unregulated battery voltage from 5.5V ... 7.5V - Stabilized voltage, programmable from 3.3V ... 5.5V in 0,1V increments
Memory	2MB for up to 500.000 values, depending on types of sensors attached (SDI-12 typically needs more memory than analog). Example: 15-minute data of an ETo station can be stored for 6 months. 4MB: ex works the A753 can also be equipped with 4MB of memory to double it's storage capacity beyond 1 year for a standard ETo station.

Special Logger functionality:	
Wind gust monitoring	Port C + Adcon wind sensor: 4 samples per second, 4 times per second calculation of 3-second average; Date and time of gust stored
Wind vector monitoring	Port C + Adcon wind sensor: wind direction is measured simultaneously with speed, weighed depending on speed, and stored as a vector

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Rain intensity monitoring	Port D + rain gauge with pulse output (max. resolution: 1 second). Date and time of each pulse are stored; in addition up to 3 analog signals and 2 counter inputs can be stored, e.g. wind speed and air temperature
Pressure hammer detection	Port C + Adcon manometer sensor: manometer is permanently powered, sampled 4x per second, and a 3-second average is stored
Low Voltage Amplifier	Port B: sensors with an analog output of 0-150mV can be connected directly; internal amplifier
Asynchronous sampling	To prevent sensors from influencing each others readings when read simultaneously, ports can be sampled sequentially
Event-Monitor	To rapidly detect status changes on a digital input it can be sampled up to once per second; date and time of each status change are put in memory; attention: with frequent status changes this can generate a lot of data! Applications: error detection on equipment, access control, pump monitoring, etc.

Data transmission:	
Frequency ranges	Band 1: 430 ... 440 MHz Band 2: 440 ... 450 MHz Band 3: 450 ... 460 MHz Band 4: 460 ... 470 MHz
Modem	Made by Adcon Telemetry
Antenna	Omni directional, vertical, TNC jack, +2dBi

General:	
Power Supply	internal 6.2V battery, charged by solar panel or mains power supply
Battery	Panasonic Hi-temperature cell, industry grade, NiMH, 3300mAh
Type approvals	FCC, R&TTE, CE, Industry Canada, ACMA Australia