Datalogger MeteoDAS pro

Desciption

The **MeteoDAS® pro** was developed with the aim of supplying a very versatile, low power, flexible and user-friendly product, while keeping as few variants as possible.

The **MeteoDAS® pro** is based on the Atmel SAMA5D3 microprocessor, and it has 256 MB RAM and 512 MB NAND Flash. It has a combination of several features, including a power supply, a charger for Li-Ion batteries, Wi-Fi and Bluetooth, a 4G/5G modem, a GPS receiver, 16 analog inputs, 8 digital inputs, 8 digital outputs and multiple serial connections. These functions and the software developed for the device make this product very useful in many standalone applications.

The device is delivered with a Linux operating system preinstalled. The system has a web interface for configuration, accessible through a direct USB connection to a PC, through Wi-Fi or Ethernet. It has the capability to run applications for data logging and event-based actions.

The device has 16 isolated analog inputs (±10V and 0-10V/0-20mA), enabling data acquisition with a resolution up to 24 bits. 8 digital inputs and 8 digital outputs (all opto-isolated) allow the user to control or be controlled by auxiliary equipment.

All connections are accessible through standard connectors and easy to use push-wire terminals.

The power supply can be backed-up by an external Li-Ion battery. A built-in charger with MPPT functionality will ensure that the battery is fully charged. A power down mode with wake-up on timer or multiple inputs allows very long operation on battery power.
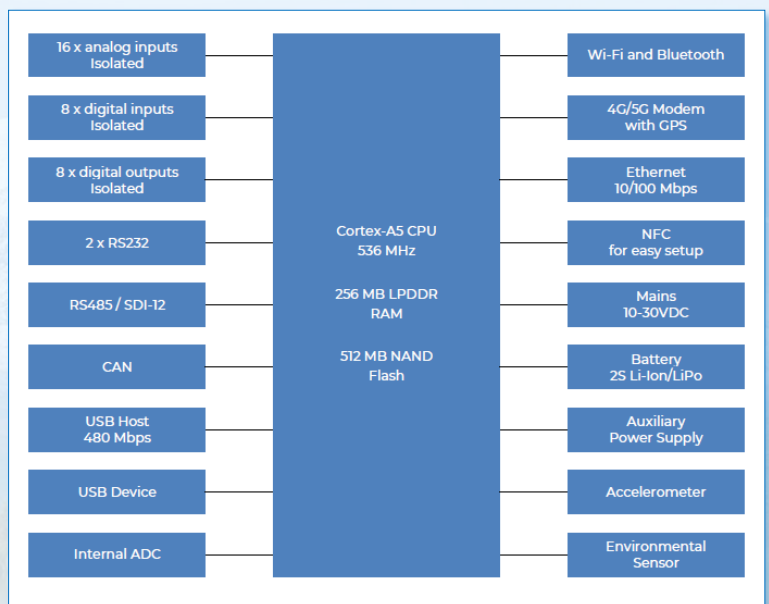
The **MeteoDAS® pro** is ideal for data logging and alarm systems, and it withstands extended temperatures, shock and vibration of mobile equipment.

There are three standard configuration options within the **MeteoDAS® pro** series. The differences lie with different modem configurations. Besides the option of having no modem installed, the **MeteoDAS® pro** comes with the option of having either a low power modem or a high-speed modem.

The low power modem supports NB-IoT and CAT-M with 2G fall-back. It also has the option of communicating over LoRaWAN. The high-speed modem supports LTE CAT4 with 2G fall-back. Both modems have a built-in GPS receiver. External SMA connections are available for RF-signals.

Datalogger MeteoDAS pro

Left side	CPU	Right side
16 x analog inputs Isolated		Wi-Fi and Bluetooth
8 x digital inputs Isolated		4G/5G Modem with GPS
8 x digital outputs Isolated		Ethernet 10/100 Mbps
2 x RS232	Cortex-A5 CPU 536 MHz	NFC for easy setup
RS485 / SDI-12	256 MB LPDDR RAM	Mains 10-30VDC
CAN	512 MB NAND Flash	Battery 2S Li-Ion/LiPo
USB Host 480 Mbps		Auxiliary Power Supply
USB Device		Accelerometer
Internal ADC		Environmental Sensor

Technical specifications may be varied without prior notice

Technical features

System	ARM Cortex-A5, 24-536 MHz 256 MB LPDDR RAM 512 MB NAND Flash Micro SD Card
Operating system	Linux 5.11
Power	Input voltage: 10-30VDC Maximum input voltage: 35VDC Output voltage: 5-24VDC, 12W Power consumption: Maximum 15W
Charger	Internal and external battery connection (Li-Ion or Li-Po) Support for battery configuration 2S or optional 3S Charging current range: 100mA to 3200mA MPPT
Digital input	8 digital inputs, 0-30V Isolation: Up to 1 kVrms, 1 minute Logic 0: 0-1.5 VDC Logic 1: 2.5-30 VDC Input current (max) @ 30 VIN: 5 mA
Digital output	8 digital outputs, PNP outputs Isolation: Up to 1 kVrms, 1 minute Max load current: 0.5 A/output, 1.0 A total External voltage: 5-30 VDC
Analog input	8 analog single ended inputs +/-10V 8 analog single ended inputs 0-10V or 4-20mA (configured in pairs) Differential inputs: Pairs of two can be software configured Resolution: Up to 24bit, depending on conversion speed Conversion speed: Up to 23.7kSPS Input impedance: 1MΩ||100pF (voltage), 100Ω||100pF (current) Accuracy: 0.25 % initial accuracy Temperature drift: 50 ppm/°C Isolation: Up to 1 kVrms, 1 minute
Serial, RS232	1 RS232 (signals: RxD, TxD CTS, RTS) 1 RS232 (signals: RxD, TxD) Speed: Up to 250kbps
Serial, RS485	1 RS485 (signals: A, B) Half duplex Speed: Up to 1 Mbps External termination needed
Serial, SDI-12	1 SDI-12 Half duplex
Serial, CAN bus	1 CAN (signals: H, L) External termination needed Speed: Up to 1Mbps Comply with ISO 11898-2
Internal sensors	Temperature: -40 to 85 °C, resolution 0.01°C Humidity: 0%RH to 100%RH, resolution 0.04%RH Pressure: 10 to 2000 mbar, resolution 0.016 mbar Accelerometer: Full scale ±2g/±4g/ ±8g/±16g, sampling rate 1 Hz to 5.3 kHz.

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Technical feature

USB	1 USB Host, A, Up to High Speed (480Mbps) 1 USB Device, Micro B, Up to High Speed (480Mbps)
Ethernet	1 Ethernet 10/100Mbps, RJ45 Half and full duplex Auto MDI/MDI-X Link/Activity LED
Wi-Fi	Frequency: 2.4/5GHz 802.11a/b/g/n/ac Speed: Up to 433 Mbps Connector type: SMA-RP (shared with Bluetooth)
Bluetooth	Bluetooth 5.0 BR/EDR/LE Speed: Up to 3 Mbps Connector type: SMA-RP (shared with Wi-Fi)
NFC	NFC (for quick setup)
Miscellaneous	4 LEDs 2 Buttons RTC Internal expansion connector with I2C, SSC, SPI, UART, GPIO and power
Modem, Low Power Optional	4G Modem, NB-IoT (NB2), Cat-M1, 2G fallback LoRaWAN GNSS (GPS/GLONASS/BeiDou/Galileo/QZSS) Internal eSIM Connector type: SMA + microSIM
Modem, High Speed Optional	4G Modem, Cat 4, 2G fallback NeoCortec GNSS (GPS/GLONASS/BeiDou) Internal eSIM Connector type: SMA + microSIM
Environmental	Operating temperature: -20° to 60° C Storage temperature: -40° to 85° C Humidity: 20 to 80 % non-condensing Cyclic humidity: ETS 300 019-2-5 or equal Vibration: 10-1000 Hz Sine and random @ 1-1.5 GRMS
Mechanical	Size (W x L x H): 215x145x70 (with connectors mounted) Weight: 815 g (excl. packaging)

Ordering code

Datalogger MeteoDAS pro without modem	**PCTDA025**
Datalogger MeteoDAS with LTE CAT4 modem	**PCTDA024**
Datalogger MeteoDAS with NV-IoT modem	**PCTDA026**

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