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## Meton Sense

	Model	Meton Sense
	Description	Intelligent IoT gateway / datalogger
	Unique characteristics	<ul style="list-style-type: none"> <li>Count of I/Os can be extended via the use of RS485 extension modules</li> <li>Ceaseless data logging and instant alarming capability on event of interruption of the mains supply thanks to its embedded rechargeable lithium battery (LiPo)</li> <li>Universal inputs (UI) for processing of analog (AI) and digital signals (DI)</li> <li>High resolution in analogue inputs readings thanks to its 12 and 16 bit A/D converters</li> </ul>
	CPU	1GHz, dual core ARM, 32bit of Texas Instrument (USA), RAM at 512MB and embedded flash at 4GB (eMMC). Runs on Linux Debian
 <p>Meton Sense</p> <p><i>For illustration purposes only. Ordered products may vary from illustration</i></p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Technical Specifications</p>	<p>8x universal inputs (UI)<sup>(5)</sup> as</p> <ul style="list-style-type: none"> <li>Analogue inputs (AI) for temperature sensors thermistor type NTC/PTC or digital inputs (DI) for dry contacts</li> <li>Analogue inputs (AI) for temperature transmitters MB1 or digital inputs (DI) for dry contacts<sup>(1)</sup></li> <li>Analogue inputs (AI) for generic sensors 0/4...20mA<sup>(2)</sup> or digital inputs (DI) for dry contacts<sup>(1)</sup></li> <li>Analogue inputs (AI) for generic sensors 0/2...10V or digital inputs (DI) for dry contacts<sup>(1)</sup></li> </ul>
		<p>Integrated I/O</p> <p>Upon request, available hardware variants for: a) 2x digital outputs (DO) for relay actuation (occupying 2x UI) b) 1-wire interface (occupying 2x UI), c) up to 2x RTD inputs (in 3-Wire configuration occupying 3x UI for 1x RTD or 5x UI for 2x RTDs) RTDs supported are Pt50/Pt100/Pt1000/Ni100 at meas. range up to -200...+850oC with resolution 0.02oC and coef. 0.00385 for Pt100 acc. to IEC 60751, d) 1x thermocouple input type J/K/N/S/R/B (occupying 2x UI), with internal CJC, at meas. range up to -270...+1370oC for type K c) customized I/O configuration (as combination of Thermistor / MB1 / 4...20mA / 0...10V / DI / DO / 1-wire / RTD / Thermocouple)</p>
	Measuring range of AI	<ul style="list-style-type: none"> <li>-200...+850°C with resol. &lt; 0.02°C and acc. &lt; ±0.05°C for RTD Pt100 3-wire</li> <li>-50...+60°C with resol. &lt; 0.08°C and acc. &lt; ±0.5°C for transm. MB1 (acc. &lt; ±0.12°C at range -25...+25°C)</li> <li>-55...+125°C with resol. &lt; 0.06°C and acc. &lt; ±1°C for transm. 1-wire (acc. &lt; ±0.50°C at range -10...+85°C)</li> <li>-50...+110°C with resol. &lt; 0.2°C and acc. &lt; ±1°C for thermistors NTC 10k at 25°C with beta 3435</li> <li>-270...+1370°C with resol. &lt; 0.05°C and acc. &lt; ±0.5°C for thermocouple type K</li> <li>0...21mA with resol. &lt; 0.03mA and acc. &lt; ±0.1% for transm. 4...20mA</li> <li>0...11V with resol. &lt; 0.03V and acc. &lt; ±0.1% for transm. 0...10V</li> </ul> <p><i>Unless otherwise noted, stated accuracy a) refers to meas. range -25...+25°C b) is valid after factory default multiple</i></p>

	<p>point offset removal applied internally at Meton (functionalization) c) refers to Meton analog inputs when connected with sensors of cable length up to 3m and pre-defined factory accuracy within specific meas. range d) does not take into account offsets introduced by cable extension of sensors</p>
Communication interfaces	<p>1x RS485 1x Ethernet (base 10/100Mbps)</p> <p>Upon request, available hardware variants for: a) additional RS485 interface, b) com. and bus power optical isolation on the additional RS485 interface c) RS232 interface (occupying 2x UI) d) EU standardized acc. to EN 13757-4, wireless receiver wM-Bus, 868MHz, modes T1 OMS and C1<sup>(7)</sup> e) 2G cellular WAN modem with embedded SIM card and triple cellular WAN operator failover</p>
Supported communication protocols	<p>Modbus RTU (master), Modbus ASCII (master) and Modbus TCP (master/slave)</p> <p>Upon request, available firmware variants for: a) M-Bus master b) wM-Bus master on modes T1 OMS and C1<sup>(7)</sup> c) simultaneous operation as Modbus RTU slave (on the additional RS485 port)</p>
Real time clock	<p>Embedded RTC module with lithium battery (Li2MnO2) for real time clock support up to 4 years from the mains power supply interruption. Time synchronization over the network (NTP) is also supported</p>
Power supply	<p>Main: 6...36VDC on the supply terminals, screw type, 2.5mm<sup>2</sup> Aux: 5VDC on female DC jack connector, type A acc. to IEC 60130-10</p>
Consumption	<p>Typical: 2.3W, Max: 6W (charging)</p>
Backup power supply (UPS)	<p>Embedded rechargeable lithium battery (LiPo) for UPS time up to 4<sup>(4)</sup> hours from the mains power supply interruption. Sophisticated battery management system featuring battery temperature and fuel monitoring. Ensures ceaseless data logging for the embedded I/O types Thermistor / DI / MB1 / RTD / Thermocouple / mA<sup>(2)</sup> / V<sup>(2)</sup> / 1-Wire and instant notifications on power supply changes and battery replacement need</p>
Temperature range	<p>-20...+70oC Upon request, available hardware variants for: -40...+85°C</p>
Ingress protection	<p>IP40 acc. to IEC 60529</p>
Weight	<p>175g</p>
Dimensions	<p>73x100x35 mm</p>
Mounting	<p>Wall or DIN rail mount</p>
Accessories	<p>Included: a) switching power supply<sup>(3)</sup>, 230VAC/5VDC, 2A, with male DC jack connector, type A acc. to IEC 60130-10 b) Patch cable, UTP Cat5e, RJ45, 2m</p>
<p><b>Remarks:</b></p> <p>(1) Needs external resistor mounted in series</p> <p>(2) Up to 4 transmitters of type mA, 2-wire, loop powered, can be supplied by the internal UPS DC supply of Meton (12, 15 or 24VDC depending on Meton hardware variant with sourcing capacity of 1W max, available at V<sub>s</sub> terminal) or by external DC power supply available on the main supply terminals (6...36VDC depending on the sensor's supply requirements)</p> <p>(3) Alternatively and upon request: with DIN rail switching power supply, 230VAC/5VDC, 15W, compact type (length 1x DIN module), with input/output isolation and converter from connector male DC jack type A acc. to IEC 60130-10 to terminals 2mm<sup>2</sup></p> <p>(4) UPS time has been calculated on the basis of standard hardware variant with no I/O and RS485 terminals unconnected. UPS time is affected by a) type and count of sensors connected on the I/O and RS485 terminals b) hardware variants utilizing additional modules (eg. 2G cellular modem) c) type and count of sensors, transmitters and devices being supplied by the V<sub>s</sub> terminal</p> <p>(5) All UIs are protected from short circuits and electrostatic discharge up to 16kV (ESD rating: class 3B). All UIs are equipped with analog LPF for rejecting 50/60Hz EM noise. RTD and thermocouple noise rejection is further enhanced by</p>	

*embedded on IC, digital filter, resulting in -3dB bandwidth of 14.8Hz. All UIs are further digitally filtered by Meton (configurable -3dB cutoff frequency and response time)*

**(6)** *The fieldbus interfaces (RS485), are protected from voltage surges, reverse polarity and electrostatic discharge acc. to IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge)*

**(7)** *Upon request available hardware variants for other frequencies (433MHz, 169MHz) and firmware variants for other wM-Bus modes (S1, S2, T2, N1, N2)*