

SMARTbox Mini

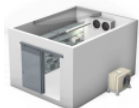
Smartbox, based on the Telit Chipset HE910 is a ready to use solution for connecting Modbus devices to the Cumulocity Fieldbus Cloud. It provides a Master Slave Communication on RS485 for connecting up to 10 devices. Easy configure the SetUp of building automation fielddevices like pumps, e-meters, Airhandling units in the Cumulocity Fieldbus cloud. Using the MQTT protocol the terminal comes up with a low traffic solution for decentralized applications.

SMARTBox Mini

Tested on modbus building automation devices



Carel-EMeter



Dixell Cold Room Control



Carel-AirHandlingUnit



Daikin AirConditioning



Carel Chiller/Heatpumpsystem



Carel Compressoracks Showcases



Developed for **Cloud Fieldbus**

- Flexible Device database
- Alarming
- Events
- Measurements
- Value/Operations
- SetUp Modbus MasterCommunication
- Remote restart



General Features

- Offline Buffer for Alarms and measurements up 24hours
- m2M Locate on cellular network
- Full Smartrest Support (low data traffic)
- Sending cycle defined by sms during runtime

Montage

- Small Housing
70mm x 50mm
- Mounting by Magnet or Switchboard clips

SMARTBox

- OutOfBox Modbus Solution
- Betriebsspannung 12-24V
- Telit ChipSet 2 Options
 - GE910 (2G)
 - HE910 (3G)



Modbus RTU RS485

- Modbus Master
- Frames: Parity/Even/ODD
- Stoppbits: 1/2
- Baudrate: 4800, 9600, 19200..115200
- FunctionCodes; F1/F2/F3/F4/F5/F6
- Up to 20 Devices on Modbus Line

SMARTbox Mini Datasheet



Radio

4G LTE	LTE Cat 4 (incl. 3G/2G) LTE Cat 1 (incl. 3G/2G) LTE Cat M1 NB-IoT (Cat NB1)
3G	UMTS HSPA+ (incl. 2G) UMTS HSPA (incl. 2G)
2G	GSM GPRS
Regions	EMEA / APAC / Latinamerica / NorthAmerica / Australia / Global (3G / 2G)
GPS	Supported by 2G and 3G Variancees
Production	The selected Region,Technology and GPS can be defined during Production. The default assembly is 3G with supported regions EMEA / APAC
Chip	Telit xE910 Family



Connectivity/Features

Layout		
Serial Interface	RS232 / RS485 Type defined by production	
Fieldbus Modbus	Type	Modbus RTU Master
	Baudrate	4800, 9600, 19200, 38400, 57600, 115200
	Parity	Even, ODD, NONE
	Stoppbits	2,1
	Functioncodes	Funct.1 (Read Single Coils) Funct.2 (Read Input Status) Funct.3 (Read Holding Registers) Funct.4 (Read Input Registers) Funct.5 (Write Coil) Funct.6 (Write Holding Register)
	Datapoints	Max. 10 Modbus Slaves, with 100 datapoints per device or 1000 datapoints with 1 device
Sensors	2 Sensor Inputs	
	DIN/O	DIN [voltage free]
	AIN/O	NTC (selectable by Hardwarejumper, either NTC or 0..20mA)
	AIN/P+	0..20mA (selectable by Hardwarejumper, either NTC or 0..20mA)
LEDs	GSM	Flashing- connected to mobile network
	RUN	2xflashing/pause: StartUp Phase 3xflashing/pause: Connected to Server, Data exchange
	Act	Flashing: Sensor Board Power
	Link	Flashing: Sensor Board is ready to process data
USB	For programming, Logging and Trace the device	



Availability	All Cumulocity Based systems, Cloud der Dinge Deutsche Telekom	
Realtime Clock	Updating Realtime automatical from #NTP timeserver	
Application	CloudFieldbus (CFB Integrated in Devicemanagement) For SetUp connected field devices	
Online Operations	Remote Restart Fieldbus Configuration Cloud-Device Change Transmitinterval from device to Cloud Change Communication. Baudrate, Databits, Parity, Stopbits Operate the connected Field device: Registervalues (R/W) Operate the connected Field device: Change CoilValues (R/W) Operate the device with AT Commands in the shell	
Communication	MQTT	
Security	TLS-Security 1.0 / TLS 1.2 (ab Version 2.4.x)	
Notifications	Realtime and Pending Operations	
Shell	Operate the device with AT Commands in the shell	
Location	Identification by cellular network or GPS Signal (selected- see Radio)	
Tracking	Location Route by by cellular network or GPS Signal	
Info	Operator, Cell ID, LAC, MNC, MCC, Signal strength	
Device Database	Device database Support: Measurements, Event, Alarms, Values, Read, Read/Write, Signed/Unsigned, Decimal Places, Multiplier, Divisor, No of Bits, StartBit	
OTA	RemoteUpdate Software	
Data-Exchange	Values	On Change
	Alarms	On Change
	Events	On Change
	Measurements	Default 900
	Signal strength	Is sent every 20 Min as a measurement
	Offline Buffering	Alarms, Events, Measurements ≈ 72h
SMS	For Troubleshooting you can operate the device by SMS: Reboot Change tenant FOTA/OTA	



General

Dimensions	100 x 70 x 45 mm		
Weight	89g		
GSM Antenna	SMA Connector		
Power Supply	Nominal voltage range: 12-24 VDC, 10% Maximum continuous (average) supply power: 2.5 W Maximum continuous (average) supply current: 200 mA at 12V, 100 mA at 24V		
Mounting	Via DIN Rail Adapter or Adapter for Wall Mounting		
SIM Card Format	2FF		
Operating temp.	-20..60°C		
Storage temp.	-40..85°C		
Oper.humidity	Max. 85%		
Storage humidity	Max. 85%		
IP Class	IP20/IP54 (opt.)		
Approvals 	America	Europe	Australia
	FCC /IC, PTCRB /GCF	R&TTE / GCF / RED	RCM, Telstra
Conformity Declarations	EMC-Directive 2014/30/EU EN 55022:2010 EN 55024:2010 IEC 61000-6-1:2005 IEC 61000-6-3:2011 R&TTE-Directive 2014/53/EU		

	EN 301 511 V9.0.2 EN 301 908-1 V6.2.1 EN 301 908-2 V6.2.1 RoHS-Directive 2011/65/EU EN 50581:2012
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