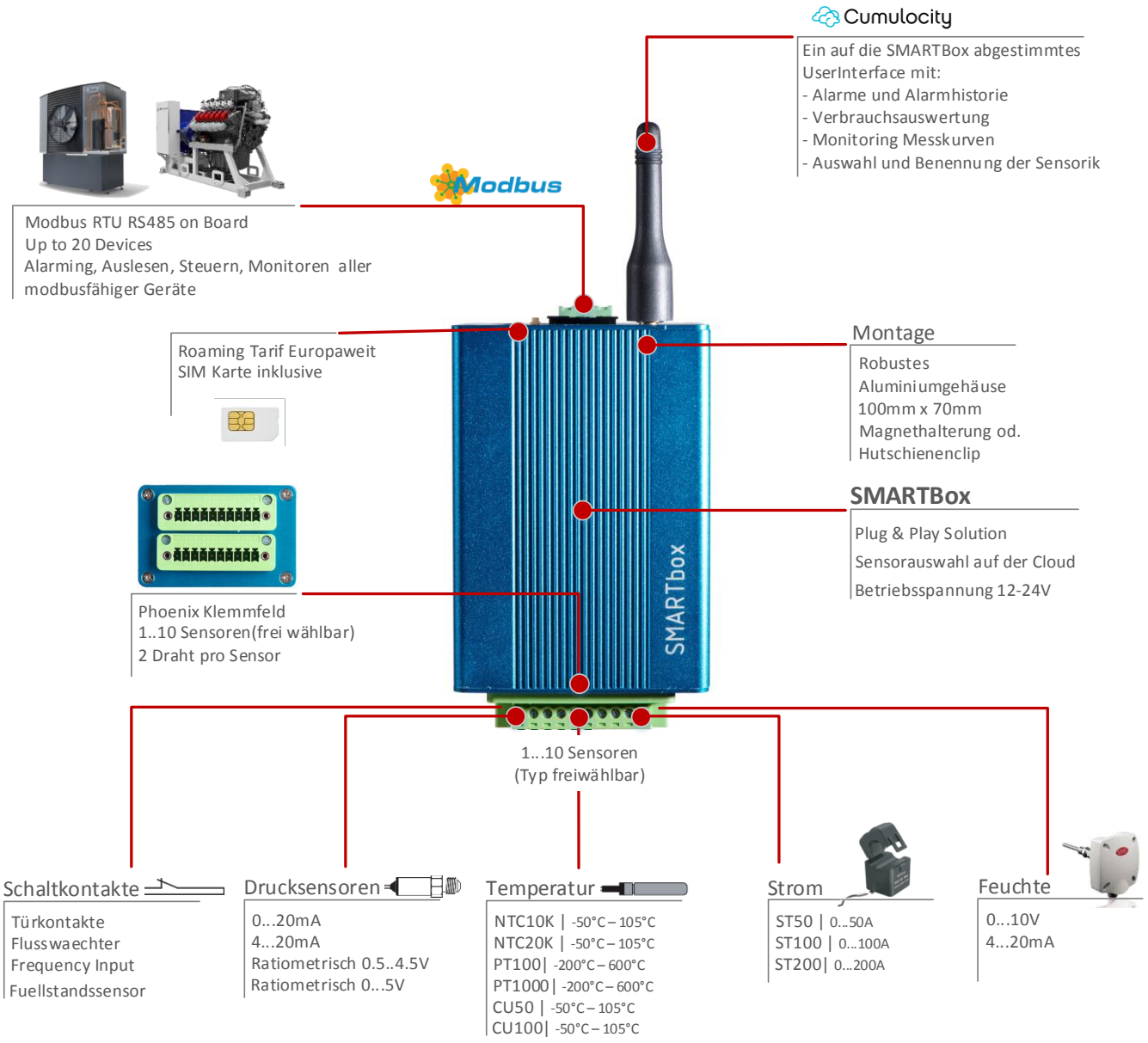
SMARTbox IO

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 as well as 10 Sensors (Current ,Temperature, Pressure). Easy configure the SetUp of building automation fielddevices like pumps, e-meters, Airhandling units in the Cumulocity Fieldbus cloud or connect different sensortypes to the box. Using the MQTT protocol the terminal comes up with a low traffic solution for decentralized applications.

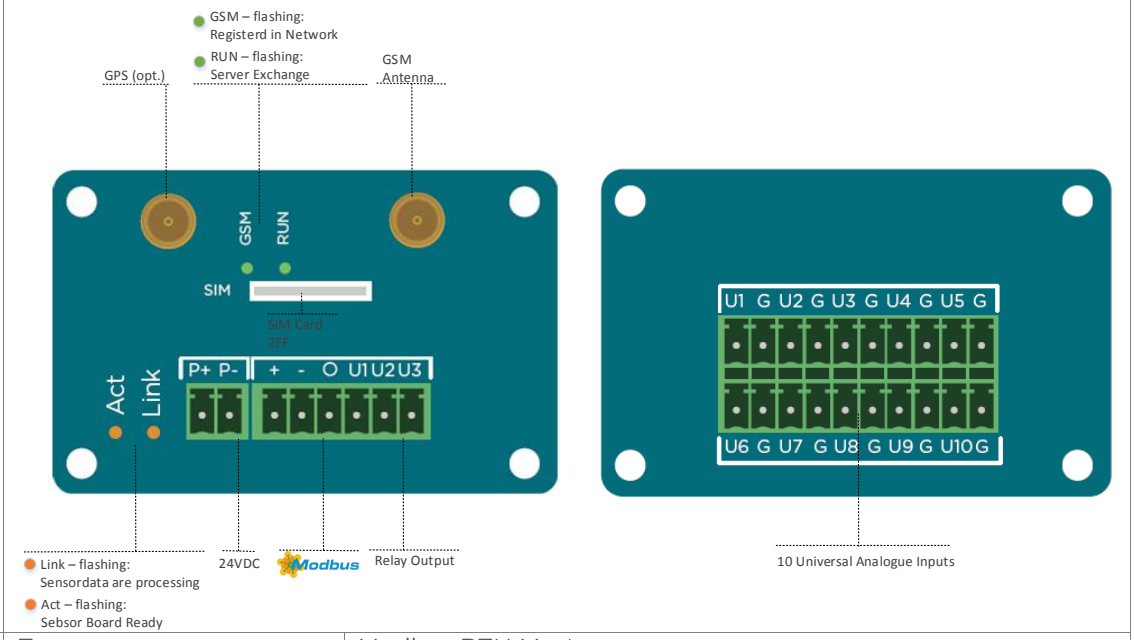


SMARTbox IO Datasheet

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 Variances
Production	The selected Region,Technology and GPS can be defined during Production. The default assembly is 3G with supported regions EMEA / APAC

Connectivity/Features

Layout		
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	10 Universal Inputs, 1 Relay Output	
	U1/U2/U3/U4/U5/U6	DIN [voltage free] /NTC/PT100/PT1000/0..10V
	U7/U8/U9/U10	DIN [voltage free] /NTC/PT100/PT1000
	RelayOutput	3A 24VDC / 3A 120VAC /2A 230V
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	

Cloud Connector

Cumulocity

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	
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, Measurments ≈ 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 Declerations	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