MC100

Gateway SensorBox

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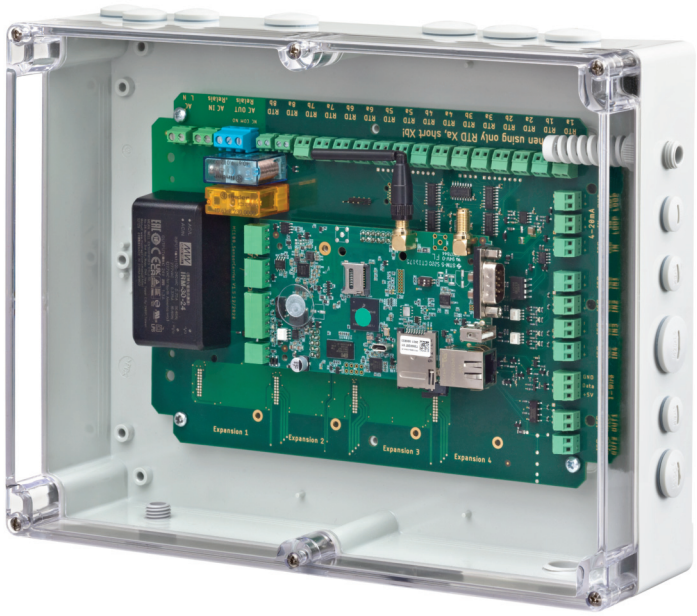

The MC100 SensorBox is equipped with interfaces for up to 8 x 2 PT100/PT1000 temperature sensors as well as a wide range of additional analogue and digital inand outputs.

The MC100 SensorBox in combination with Node-RED™ provides a fast and easy way to communicate data from distributed sensors and actors in the field to back-end systems.

Additionally the MC100 SensorBox has sufficient reserve of computing power and memory to allow for local processing of smaller tasks.

Key features & functionalities:

- Programmable 4G LTE SensorBox
- Quectel EC21-E module integrated
- Out oft the box ready for mobile Internet communication
- OpenWrt 21 based Linux distribution, Kernel 5.4.154, optimized for the ARM-based MC100 Gateway
- Node-RED™ – flow-based programming tool pre-installed
- Supports comprehensive cloud and server protocols
- Configuration via web interface
- Optional with MBus interface

4G LTE

Node-RED™

OpenWrt Linux

Cloud-Service

1-wire

16 PT100/ PT1000

GPS/GNSS (optional)

MBus (optional)

10/100 MBit/s Ethernet

RS232

USB 2.0

CAN 2.0B

RS485 and isolated RS485

4in/2out

WLAN (optional)

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MC100 Gateway Sensorbox

Technical Data

General	Description	
Type	Wireless 4G LTE gateway with multiple sensor interfaces	
Dimensions (W x H x D)	approx. 300 x 230 x 85 mm	
Weight	approx. 1 kg	
Supply voltage	100 to 240 V AC	
Operation temperature	-20 °C to +70 °C	
Housing	Closed plastic case	
Protection class	IP65	
Mounting	Wall mounting	
Wireless module embedded	Quectel EC21-E	
Mobile		
Supporting networks	**LTE Cat1:** Bands: 1, 3, 5, 7, 8, 20	
	WCDMA: Bands: 1, 5, 8	
	GSM/GPRS/EDGE: Bands: 3, 8	
Transmission rates LTE	Up to 5 Mbps uplink and 10 Mbps downlink	
Transmission rates HSPA+	Up to 5.76 Mbps uplink and 42 Mbps downlink	
Transmission rates WCDMA	Up to 384 kbps uplink and 384 kbps downlink	
Transmission rates EDGE	Up to 236.8 kbps uplink and 296 kbps downlink	
Transmission rates GPRS	Up to 85.6 kbps uplink and 107 kbps downlink	
Antenna connections	SMA (female)	4
Controller, Memory and OS		
Controller	ARM Cortex-A7 NXP i.MX 6 UltraLite, 528 MHz	
RAM	1 GB	
Flash	4 GB	
OS	OpenWrt Linux	
Programmable	C/C++, Python™, Java™, Node-RED™ or others	
Interfaces controller board		
Ethernet	10/100 MBit/s	1
USB	USB 2.0 Type A	1
Digital inputs	Galvanic isolated, special common GND (IGND), 0 - 30 V, threshhold 6 V	2
Digital outputs	Galvanic isolated, special common GND (IGND), solid state relais, 300 mA max low-side-switch to IGND	2
RS232	DB9 (RX,TX,RTS,CTS)	1
RS485	Not galvanic isolated, plug-in screw-type terminal	1
Modbus	RTU and TCP	x
CAN	CAN 2.0B, plug-in screw-type terminal	1
LED 1	Power	x
LED 2 and 3	Free programmable	x
LED 4	GSM	x
LED 5	Status	optional
SIM	Mini SIM	x
SD card	Micro SD, up to 32 GB (internal)	x
WLAN	802.11 b/g/n	optional
MBus		optional

Errors and omissions excepted.

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Interfaces carrier board		
Sensor inputs	PT100/PT1000 (8 x 2)	16
Sensor bus	1-wire	1
Digital inputs	Galvanic isolated 0 - 30 V, threshhold 6 V	4
Digital outputs	Galvanic isolated solid state relais, 300 mA max	2
Analog input	4 - 20 mA	1
Currentloop input	4 - 20 mA	1
Currentloop output	4 - 20 mA	1
Input relais	220 V to internal digital input	1
Output relais	220 V SPDT (single pole, double throw)	1
Extensions	Extension board slots	4
MBus Features (only 162188)		
36V MBus voltage for supplying the MBus slaves		
Reverse polarity protected		
Current consumption approx. 1.5 mA per slave		
Voltage modulator for master telegrams		
Detector for analysing the current-modulated slave telegrams		
Collision detection		
Data is transmitted from the master to the slave by modulating the bus voltage (0 = 24V / 1 = 36V)		
The slave responds to the master by modulating its current consumption between 11 and 20 mA		
Temperature: -40 °C to +85 °C		
Baud rate from 300 to 9600bps depending on slave		
Dimensions: 36.3mm x 39mm Tolerance: +-0.1mm		
Topology: Star, tree and linear arrangement		
Distance between MBus cables should be maintained to minimise interference.		
Cable type: Any but should be suitable for 50V/500mA		
Other properties		
Configurations	Basic configuration via web interface, ext. Configuration via config files	
Delivery includes		
Printed documentation	Quick Guide	

Variants	**Part-No.**
MC100 SensorBox	162811
MC100 SensorBox MBus	162188

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