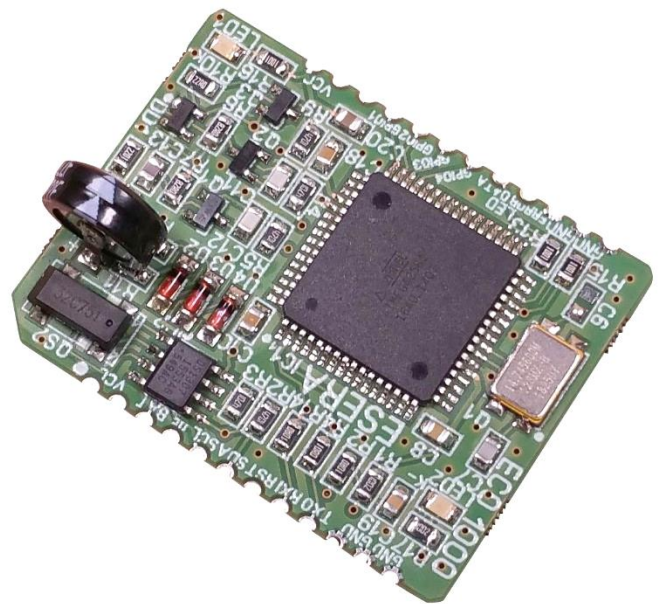


User Guide ECB-100 Embedded 1-Wire Controller

- 1-Wire Controller for Embedded Applications
- Universal and extremely powerful Embedded 1-Wire interface for your system
- Compact dimensions 42 x 32mm
- Modbus RTU and ASCII protocol
- Supports Auto-E-Connect Level 1-3
- Fast readout of all 1-Wire devices in the 1-2 seconds clock
- No 1-Wire knowledge necessary
- Ready prepared 1-Wire data in plain writing
- Serial data interface (RX, TX 5V TTL level)
- Simple 5V power supply for the module and the 1-Wire network
- Designed for small to large 1-Wire networks
- Evaluation Carrier available
- Management of all ESERA automation and many standard 1-Wire chips and modules



1 Product description

The ECB-100 1-Wire Controller represents a fully automatic and extremely powerful 1-Wire interface for embedded applications for your system. No knowledge of 1-Wire technology is required. The ECB-100 takes over the complete communication for the 1-wire bus.

Auto-E-Connect ®Support

The ESERA "Auto-E-Connect"® 1-Wire Plug and Play System will also be available for the 1-Wire Bus supported. This allows fully automatic configurations of the 1-Wire Devices on the 1-Wire Bus. It is optimized for industrial applications and provides significant added value beyond the sensor and chip data.

With the "Auto-E-Connect" function, ESERA chips, sensors and actuators are detected fully automatically, suitable libraries are started and ready-formatted data is output.

Autonomous administration

The ECB-100 controller module has very compact dimensions to be able to equip many systems with a powerful 1-wire interface.

The ECB-100 is intended for the fully automatic and self-sufficient administration of a 1-Wire network. You no longer need to worry about 1-Wire commands or formulas for the evaluation of sensor data.

The ECB-100 takes over all 1-Wire functions fully automatically.

It scans automatically for new 1-Wire devices (sensors, actuators, memory chips and iButton) and, depending on the component found, outputs the corresponding data converted to plain text.

Data interface



You can communicate via ESERA ASCII or Modbus RTU data protocol with the ECB-100 via the UART interface.

Formatted data output

The ECB-100 provides the sensor and actuator data ready prepared, e.g. for temperature sensors. in C° cyclically. Only one dividing by 100 is necessary.

Designed for all 1-Wire networks

The 1-Wire interface of the ECB-100 1 is specially designed to handle small up to very large 1-Wire networks with long cable lengths. Mixed 1-Wire sensors can be operated in parasitic or normal mode simultaneously.

The currently strongest 1-Wire interface for maximum data security even for complex network structures has been installed.

System time / real time clock

You do not have a real-time clock with battery buffering in your system? No problem, the ECB-100 is happy to provide the time and date. The real-time clock (RTC) is supplied by a maintenance-free gold cap (super capacitor) for approx. 2 days in the event of a power failure.

What is a Goldcap (super capacitor)? An explanation can be found here:
<https://de.wikipedia.org/wiki/Superkondensator>

Power supply

For the voltage supply of the ECB-100 module only a simple 5V DC voltage with min. 100mA load capacity is required.

Commissioning

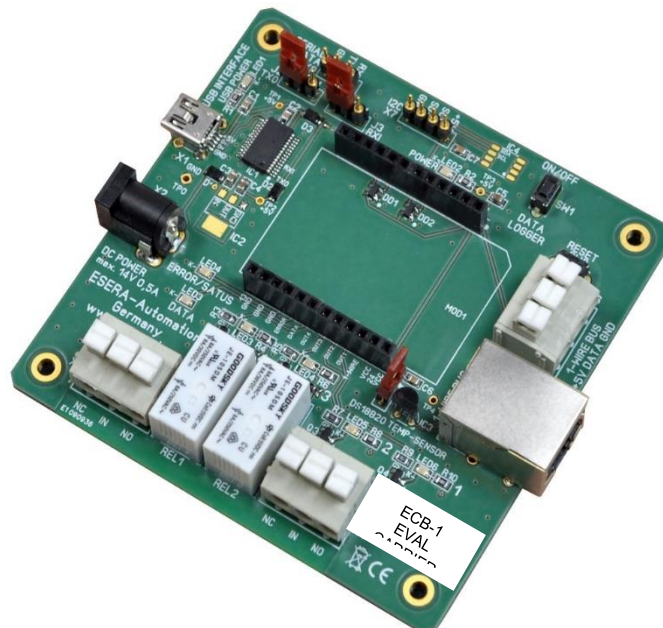
Support Videos for commissioning and configuration can be found on our website www.esera.de under Service and Support, Support Videos.

Note: Basics and tips for the 1-Wire bus system can be found in the ESERA Online Shop at 1-Wire Basics or please refer to our eBook in the shop under Training/Documentation

2 EVAL CARRIER ECB-1

To facilitate your development work, a suitable EVAL Carrier is available. Art. No. 41102, ECB-1 Carrier

Illustration example



Art. No. 41101

3 Technical data

Interface: UART Data interface, 5V TTL Level

Firmware Update/

Configuration: e.g. by ESERA Config Tool 3

Supply voltage: 5VDC +/-10%

Current consumption: min. 100mA, max. 500mA (Depending on the 1-Wire load)

Power supply RTC: Goldcap, buffering of the internal clock (RTC) for approx. 4 days if the supply voltage fails. In case of a longer failure the RTC must be reset. The gold cap is charged after approx. 30 minutes. An external additional power supply can be connected.

1-Wire interface: 1-Wire Bus (+5V, ground and Data)

Protection circuits: ESD and reverse polarity protection

Output voltage: +5V (+/-10%), max. 200mA, Overload and short-circuit proof

supported

1-Wire components: DS2401, DS1963, DS1990, DS1820, DS18S20, DS18B20, DS2413, DS2438, DS2450 DS2408, DS2405, DS2406 (input only), DS2423, additional chips on request. We are happy to support further chips as OEM products for you.

4 Ambient conditions

Temperature, Operation: -40°C bis +85°C

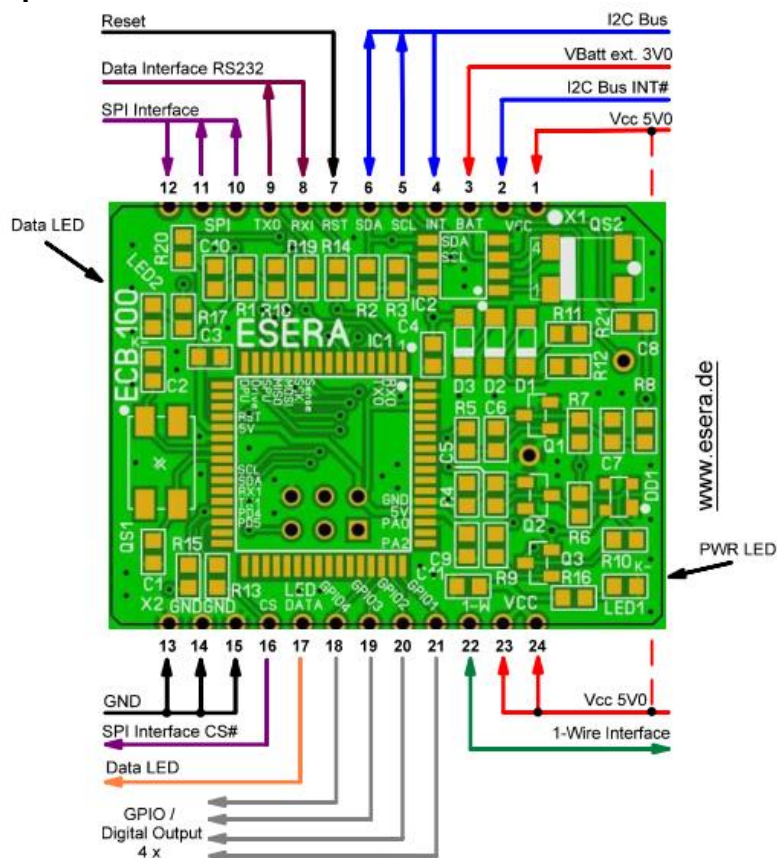
Humidity: 10 - 92% (non condensing)

Protection system: IP00

Protection class: III

Dimensions: 42 x 32 x 8mm (LxWxH)

5 Connection plan



6 Contact

ESERA-Automation, E-Service GmbH

Adelindastrasse 20, D-87600 Kaufbeuren, GERMANY

Tel.: +49 8341 999 80-0, Fax: +49 8341 999 80-10

www.esera.de, info@esera.de

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