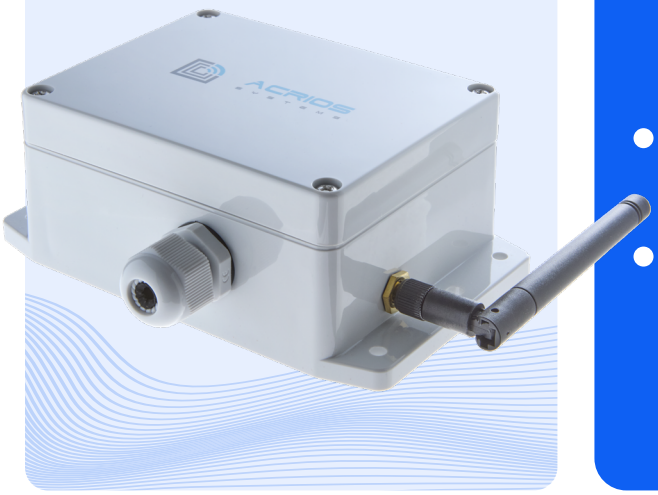
Modbus (RS485) to the **LoRaWAN**

The product is designed for an efficient readings of any device communicating via RS485, most commonly using the Modbus protocol—for example, actuators, electricity meters and other measurement devices. It enables the integration of RS485 devices into the LoRaWAN wireless network, facilitating the data collection and analysis at specified intervals.

Modbus (RS485) to the LoRaWAN



- We can read any sensor or meter with the RS485 communication—whether it's using the Modbus, DLMS or the IEC62052 protocol, either directly or through an optical head.
- We can provide the converter with an external power supply options for the sensors or detectors, ranging from 3 to 30 V DC—allowing you to connect external probes, water level measurement devices or weather stations.
- It finds application in the industrial automation, energy, agriculture or the smart city projects.
- Connect up to 96 devices with a single converter to maximize the flexibility during the installation while avoiding the need to add a converter to each meter and thereby reducing the project costs.

Installation, Operation and Longevity without Worries

Our solution is suitable for small businesses and big heating plants alike. We have experience with building and operating the private LoRaWAN networks and we can implement a device library and reduce the message length to the necessary minimum while maintaining the versatility. The client defines the library, so you can add any device.

The antenna connectors of our converters are designed for the minimal loss and the maximum reception sensitivity, making them suitable even in the heat exchanger stations. We use dual D-Cell batteries, which provide reliable operation for more than 10 years and for the demanding applications, an option with a permanent external power supply is available.

Technical specifications

General specification

Dimension	145 x 90 x 55 mm
Weight	336 g with single battery / 475g with double battery
IP rating	IP67
Mounting	6 fixation points for mounting to the wall, tube or collar
Mounting holes	4x M4 pan screw and 2x oval hole for zip-tie fixation
HS code	85269200

Opearting conditions

Operational temperature:	-30 to +60 °C
Humidity	0 to 85% RH (non-condensing)

Regulations and certifications

Standard	CE, RoHS

Device configuration

Local device configuration	Over the cable via ACR-CONFIG and the configuration app
Remote device configuration	Downlink via network
FUOTA support	Yes
Configuration options	Configuration via LUA scripting interface

LoRaWAN

LoRaWAN specification	1.0.3
Registration method	OTAA by default, ABP configurable
Class	A by default, B and C configurable
Frequency	EU868
TX Power	12.7 dBm
Maximum payload length	51B uplink/downlink and up to 235B uplink/downlink*

* dependant on the network and spreading factor

RS-485 interface

Communication protocol	Modbus RTU, Modbus ASCII, Profibus DP, IEC 62056, proprietary protocols
Physical layer	RS-485
Device type	Master by default, slave configurable
Communication speed	300 - 115 200 Bd
Maximum connected devices	96 UL
Compatibility	Any device with RS-485 interface
Signals	TX +-, RX +-
Polarization resistors	560 Ohms
Termination resistor	120 Ohms
Functionality	Modbus addressing, two way RS-485 communication, configurable RS-485 interface, RS-485 data receive (slave)
Connector	WAGO 2604 CAGE CLAMP®

Optional auxiliary power supply*

Voltage	5V - 24V DC
Connector	WAGO 2604 CAGE CLAMP®

* Version with auxiliary power supply has its own ordering code

Packaging

1x RS-485 to NB-IoT converter	1x installation manual
1x Battery	1x NB-IoT 2JW1024 antenna; 4G LTE

Optional accessories

ACR-CONFIG	Configuration cable

Ordering codes

ACR-CV-101L-R-D	RS-485 to LoRaWAN single battery pack
ACR-CV-101L-R-D2*	RS-485 to LoRaWAN double battery pack

* Under MOQ

ACR-CV-101L-R12-D	RS-485 to LoRaWAN single battery pack with 5V - 24V DC auxiliary power supply
ACR-CV-101L-R12-D2*	RS-485 to LoRaWAN double battery pack with 5V - 24V DC auxiliary power supply

* Under MOQ

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