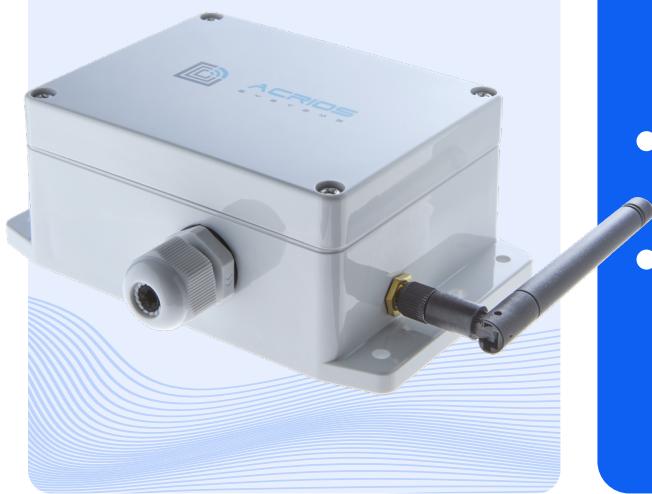


Modbus (RS485) to LoRaWAN

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 integration of RS485 devices into the LoRaWAN wireless network, facilitating the data collection and analysis at specified intervals.

\ Modbus (RS485) to 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 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.
- Applicable in 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 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 a minimal loss and a maximum reception sensitivity, making them suitable even in 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		RS-485 Interface	
Dimension	145 x 90 x 55 mm	Communication protocol	Modbus RTU, Modbus ASCII, Profibus DP, IEC 62056, proprietary protocols
Weight	336 g with single battery / 475g with double battery	Physical layer	RS-485
IP rating	IP67	Device type	Master by default, slave configurable
Mounting	6 fixation points for mounting to the wall, tube or collar	Communication speed	300 - 115 200 Bd
Mounting holes	4x M4 pan screw and 2x oval hole for zip-tie fixation	Maximum connected devices	96 UL
HS code	85269200	Compatibility	With RS-485 interface
Operating Conditions		Signals	TX +-, RX +-
Operational temperature	-30 to +60 °C	Polarization resistors	560 Ohms
Humidity	0 to 85% RH (non-condensing)	Termination resistor	120 Ohms
Regulations and Certifications		Functionality	Modbus addressing, two way RS-485 communication, configurable RS-485 interface, RS-485 data receive (slave)
Standard	CE, RoHS	Connector	WAGO 2604 CAGE CLAMP®
Device Configuration		Optional Auxiliary Power Supply*	
Local device configuration	Over the cable via ACR-CONFIG and the configuration app	Voltage	5V - 24V DC
Remote device configuration	Downlink via network	Connector	WAGO 2604 CAGE CLAMP®
FUOTA support	Yes	* Version with auxiliary power supply has its own ordering code	
Configuration options	Configuration via Lua scripting interface	Packaging	
LoRaWAN		1x RS-485 to NB-IoT converter	1x installation manual
LoRaWAN specification	1.0.3	1x Battery	1x NB-IoT 2JW1024 antenna; 4G LTE
Registration method	OTAA by default, ABP configurable	Optional Accessories	
Class	A by default, B and C configurable	ACR-CONFIG	Configuration cable
Frequency	EU868	* Under MOQ	
TX Power	12.7 dBm	Ordering Codes	
Maximum payload length	51B uplink/downlink and up to 235B uplink/downlink*	ACR-CV-101L-R-D	RS-485 to LoRaWAN single battery pack
* dependent on the network and spreading factor		ACR-CV-101L-R12-D	RS-485 to LoRaWAN single battery pack with 5V - 24V DC auxiliary power supply
ACR-CV-101L-R-D2*		ACR-CV-101L-R12-D2*	RS-485 to LoRaWAN double battery pack with 5V - 24V DC auxiliary power supply
* Under MOQ		* Under MOQ	