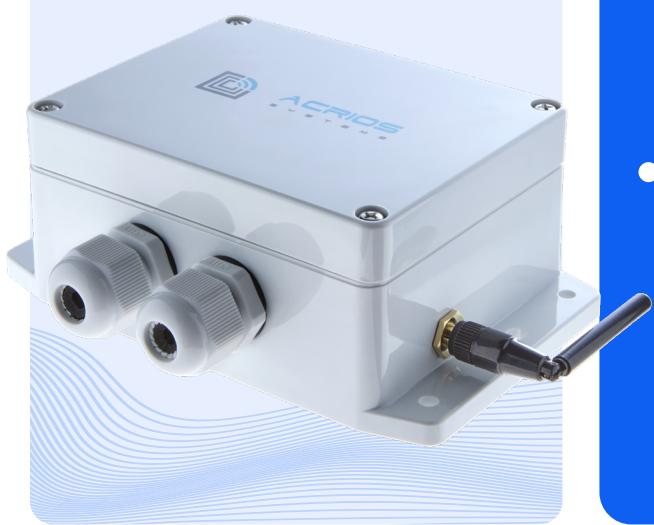


Modbus (RS485) to NB-IoT

The RS485 to NB-IoT converter is designed for 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 the RS485 devices into the NB-IoT wireless network, facilitating the data collection and analysis at specified intervals.

\ Modbus (RS485) to NB-IoT



- 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.
- Configure your library of the connected meters over the NB-IoT network, set which meters are connected and change the reading period directly from your system without the need for local configuration.
- 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 the weather stations.

\ Installation, Operation and Longevity without Worries

ACRIOS Systems converters can read meters with RS485 communication and protocols over this bus—such as Modbus (RTU, ASCII), DLMS, or IEC 62052, either directly or through an optical head. Our solution is suitable for small businesses and large heating plants, designed for an easy integration into the existing systems. The antenna connectors

are designed for a minimal loss and maximum reception sensitivity, making them suitable even in heat exchanger stations. We use dual D-Cell batteries, which assure 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	166 g	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, over the NB-IoT network	* Version with auxiliary power supply has its own ordering code	
Configuration options	Configuration via Lua scripting interface	Device Power Supply	
NB-IoT		Voltage	85 - 305 V AC
Bands	B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/B20/B26/B28	Frequency	47 - 63 Hz
NB module	SIM7022	Energy consumption	Max 4 W
Supported protocols	UDP	Connector	WAGO 2604 CAGE CLAMP®
Antenna	External	Packaging	
TX Power	23 dBm	RS-485 to NB-IoT converter	1x installation manual
SIM form factor	3FF, chip SIM on demand		1x NB-IoT 2JW1024 antenna; 4G LTE
Supported NB-IoT features	PSM, eDRX	Optional Accessories	
Maximum payload length	512 B uplink, 1024B downlink*	ACR-CONFIG	Configuration cable
* might be dependent on the network. Tested with Vodafone network			
Ordering Codes			
ACR-CV-101N-R-EAC	RS-485 to NB-IoT externally powered		
ACR-CV-101N-R12-EAC	RS-485 to NB-IoT externally powered with 5V - 24V DC auxiliary power supply		