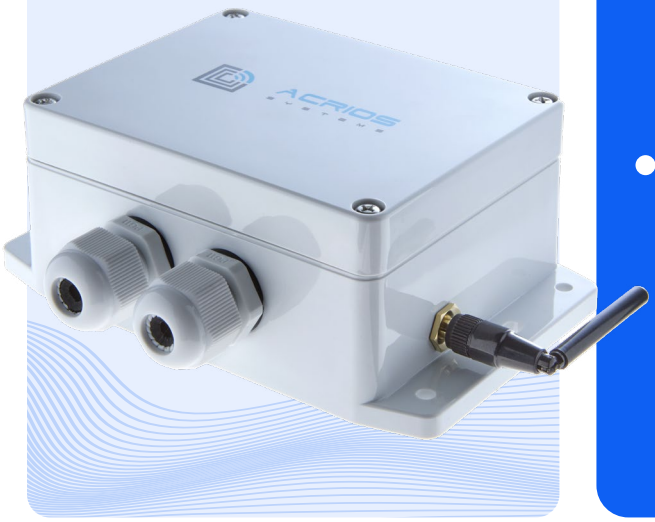
ACRIOS SYSTEMS

More on acrios.com

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.

NRND (Not Recommended for New Designs)**. Replaced by CV102.**

\\ Technical Specifications

General Specification

Dimension	145 x 90 x 55 mm
Weight	166 g
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

Operating 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, over the NB-IoT network
Configuration options	Configuration via Lua scripting interface

NB-IoT

Bands	B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/ B20/B26/B28
NB module	SIM7022
Supported protocols	UDP
Antenna	External
TX Power	23 dBm
SIM form factor	3FF, chip SIM on demand
Supported NB-IoT features	PSM, eDRX
Maximum payload length	512 B uplink, 1024B downlink*

* might be dependent on the network. Tested with Vodafone network

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	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

Device Power Supply

Voltage	85 - 305 V AC
Frequency	47 - 63 Hz
Energy consumption	Max 4 W
Connector	WAGO 2604 CAGE CLAMP®

Packaging

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

Optional Accessories

ACR-CONFIG	Configuration cable

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

* Under MOQ

ACRIOS SYSTEMS

+420 725 800 502
info@acrios.com
acrios.com

Meziříčská 2868,
Rožnov pod Radhoštěm,
756 61 CZ