Y201C CAN-to-Serial Gateway Specification



> User Manual and Wiring

> Reference: Y201C Technical Manual

Y201C is a single-CAN industrial gateway for bidirectional data transfer between one CAN 2.0 A/B bus and one serial port. The model does not include Ethernet or additional CAN channels.

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1. Overview

Y201C transfers data bidirectionally between one CAN 2.0 A/B bus and one serial port. The ordered serial variant uses `RS232`, `RS485`, or `TTL`. The TTL voltage level is not specified; verify it for the ordered variant before wiring. The gateway supports data-only, ID-plus-data, complete-frame, and Modbus RTU conversion modes.

Item	Description
Product Type	Industrial CAN-to-serial gateway
CAN Interface	One `CAN 2.0A / CAN 2.0B` channel
Serial Interface	One `RS232`, `RS485`, or `TTL` port, depending on the ordered variant
Supply Voltage	`5 to 36 VDC`
CAN Baud Rate	`10 to 1000 kbps`, default `100 kbps`
Configuration	Configuration tool or serial AT commands

Highlights

- Bidirectional CAN-to-serial transparent transmission
- Supports CAN standard and extended frames, data frames, and remote frames
- Supports serial-to-CAN data, ID-plus-data, and complete-frame formats
- Converts validated Modbus RTU frames to segmented CAN data and reconstructs CAN data for serial output
- Built-in `120 Ω` CAN termination with switch configuration
- Eight configurable CAN filters for the single CAN channel
- Serial and CAN heartbeat packets for link and device monitoring
- `5 to 36 VDC` industrial power input with reverse-polarity protection
- Hardware watchdog, serial firmware upgrade, and backup-parameter recovery

2. Ordering Information

2.1 Model Configuration

`Y201C` is a single-CAN gateway. Select the serial electrical interface when ordering:

- `RS232` for point-to-point serial devices
- `RS485` for differential multi-drop buses
- `TTL` for embedded controller connections; check the voltage level for the ordered variant

Each unit has one serial electrical interface. It does not expose all three interfaces at the same time.

2.2 Configuration

Model	Serial Interface	Description
Y201C	`RS232` / `RS485` / `TTL`	Single-CAN gateway with serial AT configuration and bidirectional CAN-to-serial transfer

3. Key Features

1. **CAN 2.0 A/B Frames**: Standard and extended frames, data frames, and remote frames.
2. **Bidirectional Transfer**: Moves data between the CAN bus and the ordered serial interface.
3. **Frame Formats**: Data-only, ID-plus-data, and complete-frame serial formats.
4. **Modbus Conversion**: Converts valid Modbus RTU traffic to segmented CAN data without acting as a Modbus master or slave.
5. **CAN Filtering**: Eight independent filters for the single CAN channel, with frame-format, ID, and mask conditions.
6. **CAN Tools**: Configurable CAN heartbeat frames, loopback testing, and packet splitting.

7. **Serial Configuration**: Configurable baud rate, parity, data bits, stop bits, packetization, and serial heartbeat.
8. **Maintenance**: Configuration tool, serial AT commands, firmware upgrade, backup parameters, and factory reset.

4. Technical Specifications

4.1 Electrical and Environmental

Parameter	Specification
Supply Voltage	`5 to 36 VDC`
Power Connector	Pluggable terminal block
Operating Current	`60 mA` average at `12 V`
Operating Temperature	`–40 to 85 °C`
Operating Humidity	`5 to 95% RH`
Reverse-Polarity Protection	Supported

4.2 CAN Specifications

Parameter	Specification
CAN Channels	One
Protocol	`CAN 2.0A / CAN 2.0B`
Frame Types	Standard / extended; data / remote
Baud Rate	`10 to 1000 kbps`, default `100 kbps`
Common Baud Rates	`10`, `20`, `50`, `100`, `125`, `250`, `500`, `800`, and `1000 kbps`
Transmit Capacity	Up to `8000 frames/s` per channel
Receive Capacity	Up to `8000 frames/s` per channel

Parameter	Specification
CAN Buffer	`1000 packets` per channel
Termination	Built-in `120 Ω`, switch configurable
CAN Working Modes	Normal / loopback
CAN Filters	Eight per channel

The supported rate list may differ by firmware. Query the target firmware before using `800 kbps`.

4.3 Serial Specifications

Parameter	Specification
Interface Type	`RS232`, `RS485`, or `TTL`, depending on the ordered variant; verify the TTL voltage before wiring
Working Modes	AT command mode / transparent mode, transparent mode by default
Baud Rate	`1200 to 460800 bps`, default `9600`; some firmware reports a lower limit of `2400 bps`
Parity	`NONE` / `ODD` / `EVEN`, default `NONE`
Data Bits	`7` / `8`, default `8`
Stop Bits	`1` / `2`, default `1`
Hardware Flow Control	`NFC` or `485`; `NFC` is the AT-command default

Query the target firmware before using `1200 bps`.

4.4 Data and Maintenance Functions

Item	Specification
Serial Packet Interval	`1 to 300 ms`, default `5 ms`

Item	Specification
Serial Packet Length	`1 to 1024 bytes`, default `1024`; some firmware reports `64 to 1460 bytes`, default `1460`
Modbus RTU Frame Length	Up to `219 bytes`
Serial Heartbeat Interval	`1 to 86400 s`, default `60 s`
Serial Heartbeat Data	User-defined hexadecimal string, `2 to 64 bytes`
CAN Heartbeat Interval	`10 to 86400000 ms`, default `60000 ms`
CAN Heartbeat Data	User-defined hexadecimal string, `2 to 16 bytes`
Firmware Upgrade	Serial upgrade through the Reload button and configuration tool

Use the range reported by the configuration tool or the target firmware's `AT+UARTTL1=?` response during commissioning.

5. Interfaces and Indicators

5.1 Hardware Interfaces

Interface	Port / Label	Description
Power Input	`+ / −`	`5 to 36 VDC` input
Serial Port	`TX / A`	RS232/TTL transmit or RS485 `A`
Serial Port	`RX / B`	RS232/TTL receive or RS485 `B`

Interface	Port / Label	Description
Serial Ground	`GND`	Serial signal ground
CAN Port	`L`	CAN differential negative
CAN Port	`G`	CAN signal ground
CAN Port	`H`	CAN differential positive
Reload Button	`Reload`	Hold for `3 to 15 s`; behavior is firmware-dependent. `AT+RSTCFG` restores backup parameters and `AT+CLRCFG` performs a full factory reset
Termination Switch	`1 / 2`	Switches the built-in `120 Ω` termination; use the switch assigned to the populated CAN channel
Chassis Ground	Grounding screw	Chassis and installation grounding

For RS485, connect `A` to `A` and `B` to `B`. For RS232 or TTL, connect `TX` to the peer `RX`, `RX` to the peer `TX`, and `GND` to `GND`.

5.2 LEDs and Status

Indicator	Meaning
`POWER`	Steady on when the device is powered normally
`WORK`	Blinks once per second during normal operation; fast blinking indicates serial upgrade mode
`UART TX`	Serial data transmission indicator
`UART RX`	Serial data reception indicator
`CAN1`	CAN data activity indicator

Indicator	Meaning
`CAN1 ERR`	CAN error indicator

5.3 CAN Termination

The gateway provides built-in `120 Ω` termination. Enable termination only when the device is installed at a CAN-bus termination point. Keep it disabled when another termination resistor already serves that position.

6. Mechanical

Parameter	Specification
Overall Dimensions	`74 x 30 x 23 mm`, excluding mounting tabs
Dimension Drawing Reference	Body height `74.25 mm`, body width `22.60 mm`, mounting-tab width `30 mm`; the drawing also labels a `15.60 mm` depth

Check the complete terminal and mounting envelope against the mechanical drawing and the final unit before preparing a panel cutout.

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