



PRECISOL AUTOMATION

Sense for Machines



RS422 Serial to Cloud Gateway

Product Specification Document

Version 1.0

RS422 Serial to Cloud Gateway

A compact and robust industrial grade cloud gateway, ideally suitable for acquiring data from RS422 enabled devices at required periodicity and upload the same to cloud for remote monitoring.

The key advantage of this device is its capability to support multiple serial protocols like Modbus RTU, Modbus ASCII, Produce & Consume and Custom Request Response. The gateway device is specially designed to withstand the harsh industrial environment with the robust IP40 enclosure and it is more user friendly with minimal efforts required for commissioning.

PreciCloud – Cloud Dashboard

A customized cloud dashboard for viewing the acquired data from anywhere at any time. Following options are provided by PreciCloud,

- Secure Login with different user modes
- Multiple widgets for general data sets such as temperature, pressure, flow, level, etc
- Detailed info about GW/slave device setup
- Remote device configuration
- OTA device upgrade
- Periodic email notifications
- SMS alerts

Highlights



Modbus
RTU/ASCII



OTA - Firmware and
configuration



PreciCon
configurator tool



PreciCloud
Cloud Platform



Periodic
Upload



Zero Data
Loss



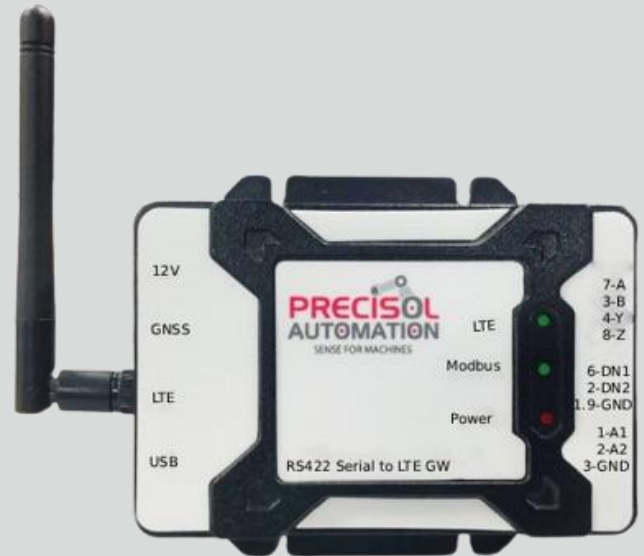
IP40 Rating
Enclosure



PreciView Mobile
Application

Key Features

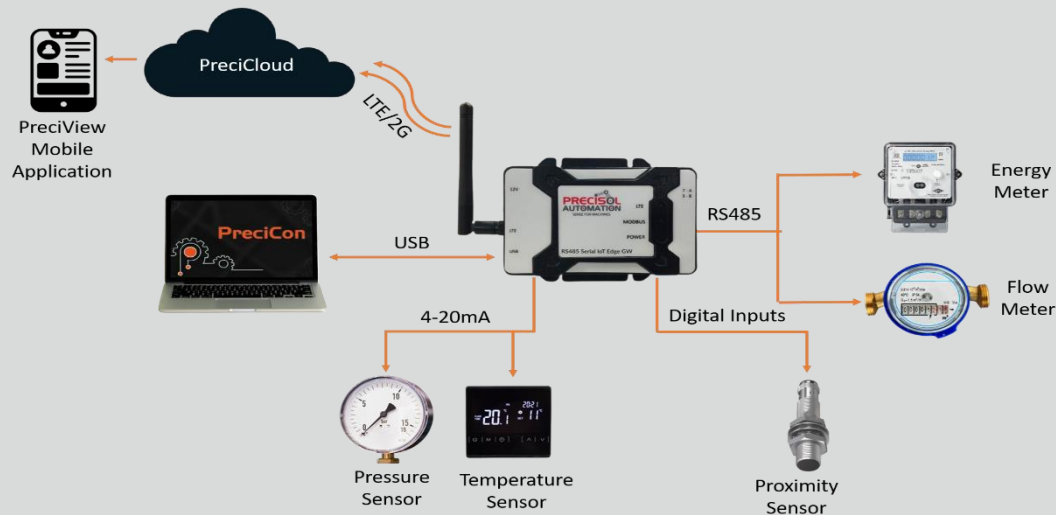
- Reliable acquisition of data from any serial RS422 enabled industrial devices
- Support various serial protocols,
 - Modbus RTU
 - Modbus ASCII
 - Produce & Consume
 - Custom Request Response
- LTE cellular connectivity with 2G network fallback capability
- Real Time Clock with network time synchronization
- Loss-less data acquisition using internal memory for storing data during network disconnection.
 - Optional and should be specified during ordering
- Three LEDs for power, Modbus and network communication indications
 - Multiple patterns for different statuses
- Two channel digital inputs for capturing external events from sensors, PLCs, etc
- Two channel analog inputs for measuring analog current output from sensors
- Optional GNSS support
- Mobile app support for remote monitoring via PreciCloud



PreciCon – Configurator Tool

- Support for configuring,
 - Serial settings
 - Modbus slave registers configurations
 - Cloud settings
 - Data upload interval, etc
- USB based PC interface for device communication
- Supports export/import of device configurations
- Support for remote configurations and firmware upgrade

Functional Architecture of RS422 Serial to LTE Gateway



Data from the RS422-based energy meter/industrial device is interfaced with the RS422 Serial to LTE Gateway. The gateway is configured locally using the PreciCon configuration tool for serial and communication parameters. After configuration, the data is securely transmitted to PreciCloud over the LTE cellular network for remote access.

PreciView – Mobile Application

A customized mobile application for viewing and monitoring acquired IoT and industrial data anytime, anywhere. PreciView provides real-time data visualization, alerts, and device status updates directly on your smartphone.

- Secure Login with customer level user modes
- Multiple widgets for general data sets such as temperature, pressure, flow, level, etc
- Detailed dashboard insights and push notifications are provided when data reaches the defined threshold limits.
- Augmented reality support for gateway onboarding.
- Voice recognition support for hands-free dashboard viewing.
- Time-series data can be viewed and exported in CSV, XLSX, and PDF formats based on the selected time range.

Technical Specifications

Function	RS422 Serial to Cloud Gateway
Power Supply	12V DC. Maximum 24V DC
Power consumption	1.5A Max @12V
PC interface	USB Mini B connector USB device communication for configuration using PreciCon tool
RS422 Serial Interface	External interface via DB-9 connector Data bits: 7 and 8 bits Baud Rate: 300, 600, 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200, 128000 and 256000 bps Stop bits: 1, 2 bits Parity: None, Odd and Even
Environmental	Dimension: 105mm X 68mm X 31.5mm (W/O flanges) Weight: 138 gm ABS plastic (IP40) Operating Temperature: -40 to +85 Degree Celsius
Data storage Capability	One Modbus register data upload every 10 seconds = 4 days One Modbus register data upload every 1 minute = 23 days
Status Indication	LED 1 for Power status LED 2 for Serial communication status LED 3 for Cloud network communication status
Analog input	
Number of channels	2
Range	Current Input – 4mA to 20mA
Resolution	12-bit
Input impedance	120 ohms
Accuracy	±0.5% FSR @ 25°C

Function	RS422 Serial to Cloud Gateway
Digital Input	
Number of channels	2
Input Switching Threshold	High = Greater than 3V or 1.5V (optional, to be mentioned during ordering) Low = Less than 3V or 1.5V (optional, to be mentioned during ordering)
Voltage input limit	30V Max
Cellular Connectivity	
LTE Category	LTE CAT 1 Support for global coverage including Europe, US, Asia-Pacific, etc (optional, to be mentioned during ordering)
Bands	LTE-FDD: B1/3/5/8 LTE-TDD: B34/38/39/40/41 GSM: B3/8
Antenna	SMA connector for external finger type or expandable antenna
SIM interface	Supports nano SIM card
Cloud Data Transfer	
Data format	<ul style="list-style-type: none"> • Log data in industry standard format. • Cyclic Logging support – Oldest file will be deleted when storage is full. • 100% power safe data logging - no file corruption when disconnected.

Function	RS422 Serial to Cloud Gateway
Cloud Data Transfer	
Time Stamp	<ul style="list-style-type: none"> • Inbuilt RTC with year, month, date, weekday, hours, minutes, seconds, and milliseconds data • RTC can be configured to match local time zone. • RTC can be auto-synced via LTE network.
UID	<ul style="list-style-type: none"> • Each device has a globally unique ID ensuring unique log file naming.
Diagnostics	<ul style="list-style-type: none"> • Periodic heartbeat to cloud for connection supervision
Product Deliverables	
<ul style="list-style-type: none"> • One Unit with IP40 rated ABS plastic enclosure • PreciCon - Windows OS based application for configuration • PreciCloud – Cloud application with individual login per user • One LTE Antenna • User Manual and Quick Start Guide 	

Ordering Info

Part Number: SCGW-RS422-GNSS-VA-DI-AI-PC-PV-IN

Part Number	Description
SCGW	Serial to Cloud (LTE) Gateway
RS485 or RS232 or RS422	RS485 or RS232 or RS422 serial interface
GNSS	Global Navigation Satellite System
VA	12V/2A Voltage Adapter
DI	X2 Digital Input
AI	X2 Analog Input
PC	PreciCloud subscription
PV	PreciView Mobile application
IN or EU or AU	-IN = India - EU = Europe / Asia-Pacific - AU = Australia/New Zealand/Latin America