## Smart IoT Module Series

### Protocol

<table>
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<tr>
<th>Sr. No.</th>
<th>Model No.</th>
<th>MQTT</th>
<th>E-mail</th>
<th>TCP-IP (Optional)</th>
<th>RS-485</th>
<th>Ethernet (Optional)</th>
<th>RS-232 (Optional)</th>
<th>2G-GSM</th>
<th>Wi-Fi</th>
<th>RS485</th>
<th>SMS</th>
<th>E-mail</th>
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<tbody>
<tr>
<td>1</td>
<td>SIM2G485S</td>
<td>•</td>
<td>•</td>
<td>On Request</td>
<td>•</td>
<td>ERS-485 Converter</td>
<td>RS-232 to Rs485 Converter</td>
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<td>SIM2G485N</td>
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<td>On Request</td>
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<td>RS-232 to Rs485 Converter</td>
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<td>3</td>
<td>SIM2G485E</td>
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<td>On Request</td>
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<td>RS-232 to Rs485 Converter</td>
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<td>4</td>
<td>SIMWF485</td>
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<td>On Request</td>
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<td>ERS-485 Converter</td>
<td>RS-232 to Rs485 Converter</td>
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</tbody>
</table>

### Note:
- • - Notification
- B - Bluetooth
- E - E-mail
- S - SMS
- WF - Wi-Fi
**Product description:**

- SIM IoT Gateways stream sensor data to cloud-hosted software platform of Ambetronics. Highly scalable offers unlimited sensor data storage, powerful analytics and search, real-time visibility and alerts, and intuitive dashboards.
- Remotely monitor industrial sensors, from pressure to temperature, tank levels, flow, and gas levels.
- SIM operates effectively as a stand-alone industrial monitoring solution.

**Features:**

- Low Power consumption
- RTC Battery-powered Real Time Clock (RTC)
- Watchdog function ensures hardware operation control of selected services
- Effective file system used for FLASH memory up to 100,000 records saved for protection against network failure
- Ease of installation due to disconnectable screw terminals
- Software based programming for ease of use and faster setting up
- Multiple slave devices can be configured to the same Gateway
- Buzzer for fault detection or connection issues
- Compact durable housing made of ABS Plastic
- Optimised for areas with weak cellular connectivity
- Quad Band 2G cellular technology
- WIFI (SIMWF485) connectivity

**Applications:**

- Fire and Security Panels
- Vending Machines
- Remote equipment management
- Access Control
- Industrial Control
- Home Automation
- Instrumentation
- Power Management

**Sensors and Inputs:**

- Monitor temperature, humidity, Oxygen, Methane & Toxic gas sensors.
- Data Transmission and Storage
- Real-time connectivity Streams sensor data to the Ambetronics Cloud in real time
- Built-in storage for offline logging Sensor data stored in built-in flash memory when Internet connectivity is unavailable

**Technical Specifications:**

**CELLULAR TECHNOLOGY**

- Cellular 2G
- Bands GSM/GPRS/EDGE Quad band 850 MHz/900 MHz/1800 MHz/1900 MHz

**WIFI**

- Protocol - 802.11 b/g/n.
- Frequency 2.4GHz

**BLUETOOTH**

- Bluetooth Low Energy 4.0
- Range 10 Meter

**PROTOCOL MQTT**

- Data sending interval 1-120 min
- Mode: 2-Modes (Application Mode and Programming Mode)
- MODBUS Protocol: MODBUS RTU (MODBUS TCP-IP-Using ERS-485 Convertor)

**Environmental:**

- Extended Operating Temp: -20° to 50° C
- Extended Storage Temp: -20° to 60° C

**Physical Dimensions:**

- Dimensions: 120 mm x 80 mm x 55 mm
- Weight: 270g

**Power:**

- Input: 5V / 2A via DC Adaptor.
- Power Consumption = 1W Approx.
Ethernet to Rs485 for MODBUS RTU Extension

- Monitoring
- Receiving mail

SIM
HEALTHY/FAULT
NET WORK
GSM ON
COM PORT
SMART IoT MODULE
AMETRONICS
SIM2G485

ERS485 converter
ERS232 converter

SIM2G485S/N/E

Upto 16 MODBUS Slaves / Address

SIMWF485

WGD-100 -WP
WGD-100 -FLP
WGD-100 -WP
WGD-100 -FLP

MQTT Broker
Your server cloud

Router/Dongle/Hot Spot

MQTT Client

 MQTT Broker
 CLOUD MQTT
 amazon web services
 IBM Cloud

AMETRONICS
SIM

STH-200-FLP
UIP-800-PMH
Smart Gas Transmitter

Smart Gas Transmitter

MQTT T
MQTT T Client
MQTT T Broker
Your server cloud
ambeiot.com

• Monitoring
• Receiving mail

• Monitoring
• Receiving SMS

Upto 16 MODBUS Slaves / Address

WGD-100 -WP
WGD-100 -FLP
STH-200-FLP
UIP-800-PMH

Ethernet to Rs485 for MODBUS RTU Extension

www.ambeiot.com
Daily E-mail Report and Notification Alert

Excel Report (SIM2G485E)

Device Configuration
Ambetronics family of RS-485 to Ethernet Converters are the best choice for transmitting serial data across an IP network. Offering flexibility, high performance and advance RS-485 to Ethernet converter technology, AEPL's **ERS-485** are ideal for applications and devices that require an efficient way of communicating with serial RS-485 devices over an Ethernet network.

ERS-485 is an economical Modbus-to-Ethernet converter that can quickly and easily be added to any device with a RS-485 serial port, making that device Web-enabled.

ERS-485 is a single port serial server, that converts a serial port to an Ethernet Port, thus removing cable length limitations, and allowing for “serial tunneling” of a device through an Ethernet or TCP/IP

AEPL’s **ERS-485 converter** (commonly referred to as Terminal Servers or Device Servers) connect RS-485 based equipment across an Ethernet network enabling you to do following things as:

- Cable replacement using RS-485 to Ethernet
- Have virtual COM ports connect PC/servers to remote RS-485 devices over Ethernet
- Communicate to multiple RS-485 devices at the same time across a network
- Use ERS-485 Converter to connect Serial PLCs to Ethernet
- Connect serial equipment over Ethernet with ERS-485 Converter.
- Modbus RTU to Modbus over TCP/IP or Modbus TCP/IP

**Converting Data from RS-485 to Ethernet**

RS-485 data sent and received on serial ports on the ERS-485 converter are encapsulated in Ethernet packets in a manner that best fits the type of data being transported.
**Specifications:**

- **Protocols:** Support TCP, UDP, DHCP, HTTP Server-Client, TELNET, Modbus TCP
- **Speed:** 10/100Mbps
- **Working:** Half Duplex
- **Configuration:** In-built HTTP Web Server
- **Working mode:** Support Server and Client
- **Transmission:** 100meter
- **Connector:** RJ45

**Power supply:**

- 1 DC jack for power connections
- **Power input:** 5VDC, 1A
- **Consumption:** ~1.5W

**Appearance:**

- **Compact Size:** 78 mm (L) x 41mm (W) x 24mm (H)
- **Material:** ABS Plastic.
- **Weight:** ~100g

**Serial interface:**

- **Parity bit:** None, Even, Odd, Space, Mark
- **Data bit:** 5bit, 6bit, 7bit, 8bit
- **Baud rate:** 600bps to 460800 bps
- **Flow control:** RTS/CTS or XON/XOFF or No flow control
- **Interface protection:** 2KV static protection
- **Interface type:** RS-485 (D+, D-, SH)

**Environment:**

- **Working temperature:** -20°C to 55°C
- **Storage temperature:** -20°C to 60°C
- **Relative humidity:** 5% to 95% RH, Non-condensing
Ambetronics family of RS-232 to Ethernet Converters are the best choice for transmitting serial data across an IP network. Offering flexibility, high performance and advance RS-232 to Ethernet converter technology, AEPL's **ERS-232** are ideal for applications and devices that require an efficient way of communicating with serial RS-232 devices over an Ethernet network.

**ERS-232** is an economical Modbus-to-Ethernet converter that can quickly and easily be added to any device with a RS-232 serial port, making that device Web-enabled.

**ERS-232** is a single port serial server, that converts a serial port to an Ethernet Port, thus removing cable length limitations, and allowing for “serial tunneling” of a device through an Ethernet or TCP/IP AEPL's **ERS-232 converter** (commonly referred to as Terminal Servers or Device Servers) connect RS-232 based equipment across an Ethernet network enabling you to do following things as:

- Cable extension using RS-232 to Ethernet
- Have virtual COM ports connect PC/servers to remote RS-232 devices over Ethernet
- Communicate to multiple RS-232 devices at the same time across a network
- Use ERS-232 Converter to connect Serial PLCs to Ethernet
- Connect serial equipment over Ethernet with ERS-232 Converter.
- Modbus RTU to Modbus over TCP/IP or Modbus TCP/IP

**Converting Data from RS-232 to Ethernet**

RS-232 data sent and received on serial ports on the ERS-232 converter are encapsulated in Ethernet packets in a manner that best fits the type of data being transported.
**Features:**
- LED Indication
- Low Cost
- 10/100Mbps Ethernet
- TCP/UDP/Telnet Modes
- DHCP/Static IP Modes
- Web Based Configuration
- Low Power

**Specifications:**
- **Protocols**: Support TCP, UDP, DHCP, HTTP Server-Client, Telnet, Modbus TCP
- **Speed**: 10/100Mbps
- **Configuration**: In-built HTTP Web Server
- **Working mode**: Support Server and Client
- **Transmission**: 100meter
- **Connector**: RJ45

**Power supply:**
- 1 DC jack for power connections
- **Power input**: 5VDC, 1Amp
- **Consumption**: ~1.5W

**Appearance:**
- **Compact Size**: 78mm (L) x 41 mm (W) x 24 mm (H)
- **Material**: ABS Plastic.
- **Weight**: ~ 100g

**Applications:**
- Fire and Security Panels
- Remote equipment management
- Access Control
- Industrial Control
- Home Automation

**Serial interface:**
- **Parity bit**: None, Even, Odd, Space, Mark
- **Data bit**: 5bit, 6bit, 7bit, 8bit
- **Baud rate**: 600bps to 115200bps
- **Flow control**: RTS/CTS or XON/XOFF or No flow control
- **Interface protection**: 2KV static protection
- **Interface type**: RS-232 (DB9 connector)

**Environment:**
- **Working temperature**: -20°C to 55°C
- **Storage temperature**: -20°C to 60°C
- **Relative humidity**: 5% to 95% RH, Non-condensing

**Manufactured by:**
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Version: ERS-232-R1-19-11-18