

Installation

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NOTICE

SpeedNet Cell Edge Gateway software can be downloaded at sandc.com/en/support/sc-customer-portal/. Instruction sheets can be downloaded at sandc.com/en/support/product-literature. If you need assistance, please call the S&C Global Monitoring and Support Center at 1-888-762-1100.

Introduction

Qualified Persons

WARNING

The equipment covered by this publication must be installed, operated, and maintained by qualified persons who are knowledgeable in the installation, operation, and maintenance of radios in electric power distribution equipment, along with the associated hazards. A qualified person is a radio technician who is qualified to install transmission-power-limited radio equipment per FCC Part 15 and who is trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed
- The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment

These instructions are intended only for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this Instruction Sheet

NOTICE

Thoroughly and carefully read this instruction sheet before programming, operating, or maintaining your S&C SpeedNet Cell Edge Gateways. Familiarize yourself with the Safety Information and Safety Precautions on pages 4 and 5. The latest version is available online in PDF format at sandc.com/en/support/product-literature.

Proper Application

WARNING

The equipment in this publication must be selected for a specific application. The application must be within the ratings furnished for the selected equipment.

Retain this Instruction Sheet

This instruction sheet should be available for reference wherever a SpeedNet Cell Edge Gateway is to be used. Retain this instruction sheet in a location where you can easily retrieve and refer to it.

Regulatory Information

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules and regulations regarding unlicensed radio-frequency transmissions. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Radiation Exposure Statement

This device complies with FCC radiation-exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC radio-frequency rules. This equipment must be installed and operated in accordance with provided instructions, and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm (7.9 inches) from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna-installation instructions and consider removing the no-collocation statement.

This device complies with Part 15 of the FCC radio-frequency rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Industry Canada Statement

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. l'appareil ne doit pas produire de brouillage;
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters (7.9 inches) between the radiator and your body.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur.

Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

Industry Canada Radiation Exposure Statement

This device meets the exemption from the routine evaluation limits in section 2.5 of RSS102 and users can obtain Canadian information on radio-frequency exposure and compliance.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

NOTICE

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTICE

Changes or modifications not expressly approved by S&C Electric Company could void the user's authority to operate the equipment.

Warranty

Warranty Qualifications

The standard warranty contained in S&C's standard conditions of sale, as set forth in Price Sheet 150, applies to S&C SpeedNet Cell Edge Gateways.

Warranty of the SpeedNet Cell Edge Gateway is contingent upon the installation, configuration, and use of the SpeedNet Cell Edge Gateway and software in accordance with S&C's applicable instruction sheets. This warranty does not apply to major components not of S&C manufacture, such as batteries, and other communication devices not of S&C manufacture. However, S&C will assign to immediate purchaser or end user all manufacturers' warranties that apply to such major components.

Understanding
Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet as well as on labels attached to the SpeedNet Cell Edge Gateway. Familiarize yourself with these types of messages and the importance of these various signal words:

 **DANGER**

“DANGER” identifies the most serious and immediate hazards that *will* likely result in serious personal injury or death if instructions, including recommended precautions, are not followed.

 **WARNING**

“WARNING” identifies hazards or unsafe practices that *can* result in serious personal injury or death if instructions, including recommended precautions, are not followed.

 **CAUTION**

“CAUTION” identifies hazards or unsafe practices that *can* result in minor personal injury if instructions, including recommended precautions, are not followed.

NOTICE

“NOTICE” identifies important procedures or requirements that *can* result in product or property damage if instructions are not followed.

Following Safety
Instructions

If you do not understand any portion of this instruction sheet and need assistance, contact your nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C’s website sandc.com, or call the S&C Global Monitoring and Support Center at 1-888-762-1100.

NOTICE

Read this instruction sheet thoroughly and carefully before installing or operating your S&C SpeedNet Cell Edge Gateway.



Replacement
Instructions and
Labels

If you need additional copies of this instruction sheet, contact your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

⚠ DANGER	
	SpeedNet Cell Edge Gateways operate between +9 and +60 Vdc, and they operate around high-voltage equipment. Failure to observe the precautions below will result in serious personal injury or death. Some of these precautions may differ from your company's operating procedures and rules. Where a discrepancy exists, follow your company's operating procedures and rules.
1. QUALIFIED PERSONS. Access to an SpeedNet Cell Edge Gateway must be restricted only to qualified persons. See the "Qualified Persons" section on page 2. 2. SAFETY PROCEDURES. Always follow safe operating procedures and rules. 3. PERSONAL PROTECTIVE EQUIPMENT. Always use suitable protective equipment, such as rubber gloves, rubber mats, hard hats, safety glasses, and flash clothing, in accordance with safe operating procedures and rules. 4. SAFETY LABELS. Do not remove or obscure any of the "DANGER," "WARNING," "CAUTION," or "NOTICE" labels.	5. SAFE DISTANCE. All persons should maintain a minimum separation of 7.9 inches (20 cm) for the SpeedNet antenna. Disconnect the ac/dc input power source from the SpeedNet Cell Edge Gateway whenever configuring or repositioning the antenna. 6. MAINTAINING PROPER CLEARANCE. Always maintain proper clearance from energized components.

Shipping and Handling

Inspection

Examine the shipment for external evidence of damage as soon after receipt as possible, preferably before removal from the carrier's conveyance. Check the bill of lading to make sure that all shipping skids, crates, cartons, and containers listed thereon are present.

If there is visible loss and/or damage:

1. Notify the delivering carrier immediately.
2. Ask for a carrier inspection.
3. Note condition of shipment on all copies of the delivery receipt.
4. File a claim with the carrier.

If concealed damaged is discovered:

1. Notify the delivering carrier within 15 days of receipt of shipment.
2. Ask for a carrier inspection.
3. File a claim with the carrier.

Also notify S&C Electric Company in all instances of loss and/or damage.

Packing

A SpeedNet Cell Edge Gateway shipment includes the following items:

1. SpeedNet Cell Edge Gateway
2. Power cord
3. Antennas and other accessories, as applicable

Before Starting Installation

This instruction sheet provides an overview of the SpeedNet Cell Edge Gateway. Choose a location where the SpeedNet Cell Edge Gateway can be securely mounted.

NOTICE

For remote antenna installation, where the antenna is not mounted directly on the control enclosure, S&C recommends installing lightning protection.

Network Design

SpeedNet Cell Edge Gateways can be installed in a variety of network configurations. Plan your network in advance and develop a logical Internet Protocol (IP) addressing scheme for your particular application.

SIM Card Installation

Open the SIM card access door and insert the micro-SIM card in the SIM-card slot. See Figure 1.

Cable Installation

Follow these steps for proper cable connection:

- STEP 1.** Connect the antenna to the SpeedNet Cell Edge Gateway.
- STEP 2.** Connect an Ethernet cable to the SpeedNet Cell Edge Gateway and personal computer (PC) used for configuring the gateway.
- STEP 3.** Connect a power supply to the SpeedNet Cell Edge Gateway.

Connections and LED Indicator Lamps

The front panel of the SpeedNet Cell Edge Gateway has connectors for cellular antennas (main and diversity), the 12-Vdc power supply plug, the RS-232 serial port, and two Ethernet ports. See Figure 2.

Table 1.

Connector	Description
Cellular antenna	Main and Diversity SMA connectors
Power	9- to 60-Vdc input, 4-pin Microfit 3.0 connector
Serial	RS-232 Sub-D 9-pin (DTE) serial port
Ethernet	10/100 Base-T RJ45 Ethernet ports

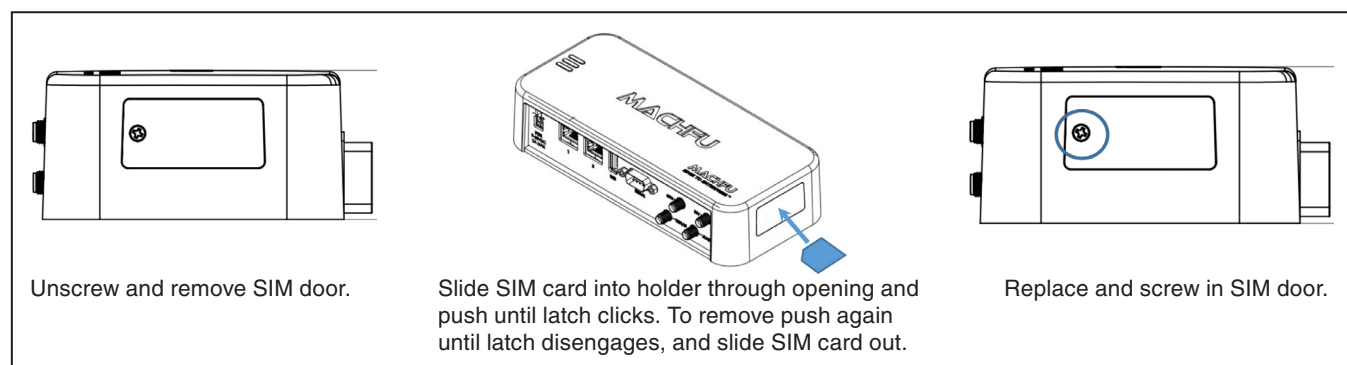


Figure 1. SIM Card Installation.

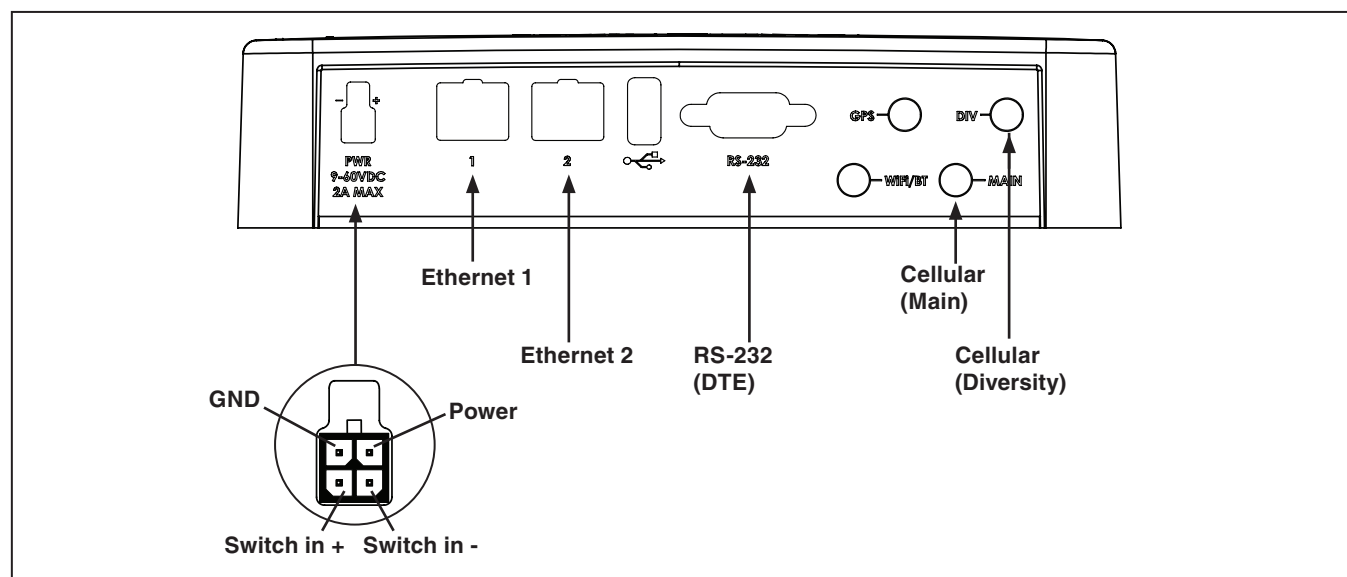


Figure 2. SpeedNet Cell Edge Gateway front panel.

Installation

As shown in Figure 3, the SpeedNet Cell Edge Gateway has the following LEDs:

The POWER LED, colored blue, shows the state of power input to the SpeedNet Cell Edge Gateway. It is hardware controlled and when off implies no power. When lit, it indicates that the SpeedNet Cell Edge Gateway has power.

The HEARTBEAT LED, colored orange, indicates various stages during the boot-up sequence. When the SpeedNet Cell Edge Gateway is first powered on, the orange LED is off for 15 seconds and then on for 10 seconds. During boot-up/initialization, the orange LED blinks rapidly for 2 seconds (8 blinks) and stays off for 3 seconds. Once boot-up/initialization is complete but the gateway is not yet online, the orange LED blinks for 4 seconds (4 blinks) and stays off for 1 second. When the gateway is online, the orange LED blinks for 2 seconds (2 blinks) and stays off for 3 seconds.

The RESERVED LED, colored yellow, is unused and is reserved for future use.

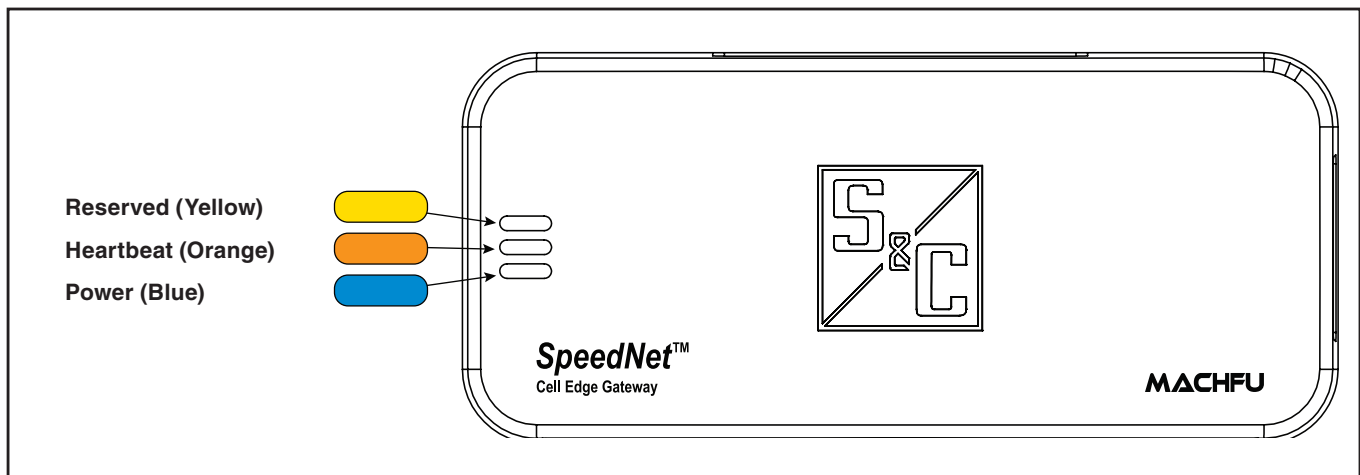
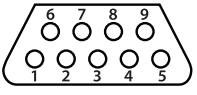


Figure 3. SpeedNet Cell Edge Gateway LED indicators.

Interface Pinouts

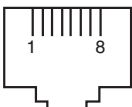
The RS-232 Interface of the SpeedNet Cell Edge Gateway is configured as data-terminal equipment. See Figure 4.

The SpeedNet Cell Edge Gateway Ethernet ports use RJ-45 connectors with the pinout shown in Figure 5. The Ethernet ports are on the front panel of the SpeedNet Cell Edge Gateway. They are auto-sensing for assignment of transmit and receive lines (no crossover cables required) and auto-negotiate for 10-Mbps or 100-Mbps data rates, as required by the connected device.



Pin	Function	Description
1	NC	No Connection
2	RXD	RS-232 Receive
3	TXD	RS-232 Transmit
4	NC	No Connection
5	GND	Signal Ground
6	NC	No Connection
7	RTS	Request to Send
8	CTS	Clear to Send
9	NC	No Connection

Figure 4. SpeedNet Cell Edge Gateway RS-232 interface pinout.



Pin	Function	Description
1	TXD+	Transmit
2	TXD-	Transmit
3	RXD+	Receive
4	NC	No Connection
5	NC	No Connection
6	RXD-	Receive
7	NC	No Connection
8	NC	No Connection

Figure 5. SpeedNet Cell Edge Gateway RJ-45 interface pinout.