PRODUCT DATA SHEET

Relay

Deploy advanced technologies all the way to the customer premise

- Provides multi-hop networking to extend the reach of utility networks
- Supports thousands of meters for cost-effective deployment
- Installs easily on existing assets
- Intergrates seamlessly with smart grid applications, such as Advanced Metering, Distribution Automation, and Demand Response

Increase network reach, with ease

The Silver Spring™ Smart Energy Platform combines network infrastructure, software, and professional services to enable a range of smart grid applications. The Silver Spring Relay and Access Point work together to relay data from endpoints to the utility back office. The Relay enables utilities to extend network reach to more customers cost effectively. Silver Spring's highly reliable, standards-based RF network enables communications between the Access Point and smart grid endpoint devices, providing secure, real-time measurement and control.

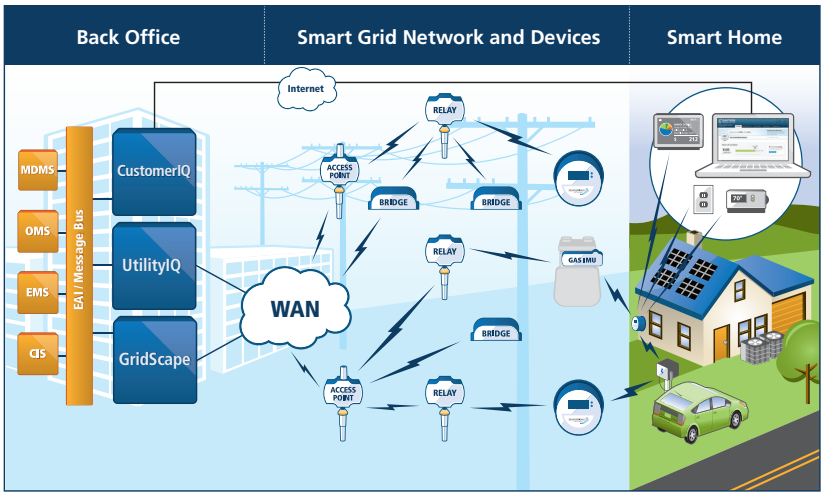
With a full set of advanced features and functions, the Relay supports a long list of value-added applications and services, including Advanced Metering, Demand Response, Outage/Restoration Management, and Distribution Automation.

Built on a fully capable platform

At the heart of the Relay is the UtilOS® firmware, which provides multi-hop capability between Silver Spring-enabled intelligent endpoint devices and the Access Point, for seamless integration. UtilOS provides secure communications, automatic network discovery, network resiliency, and device authentication.

Flexible deployment options

Utilities can deploy Relays on a broad array of existing assets. Mounting kits are available for installing Relays on distribution poles, street lights, walls, and inside pad-mounted enclosures. A specialized Underground Relay offers a submersible-rated enclosure for deployment in underground vaults and basements. Multiple external antenna options are available to further extend the Relay's range and coverage levels.



The Silver Spring Relay enables utilities to simply and cost-effectively extend the network's reach.

About Silver Spring Networks

Silver Spring Networks is a leading smart grid solution provider that enables utilities to achieve operational efficiencies, reduce carbon emissions and empower their customers with new ways to monitor and manage their energy consumption. Silver Spring provides the hardware, software and services that allow utilities to deploy and run multiple smart grid solutions, including Smart Metering, Demand Response, Distribution Automation and Distributed Generation, over a single, unified network. Silver Spring's Smart Energy Platform is based on open, Internet Protocol (IPv6) standards, allowing continuous, two-way communication between the utility and devices on the grid. Silver Spring has numerous deployments with leading utilities around the world, including Baltimore Gas & Electric, CitiPower & Powercor, Florida Power & Light, Jemena Electricity Networks Limited, Pacific Gas & Electric, Pepco Holdings, Inc., and United Energy Distribution, among others. For additional information, please visit **www.silverspringnet.com**.

PRODUCT DATA SHEET

Relay

Features

- Full, two-way 900 MHz FHSS communications
- One-watt transmitter
- Dynamic network discovery and self-healing
- Robust built-in data security and device authentication
- "Over-the-air" firmware upgrades
- Simple installation and testing
- Acts as packet relay for endpoint devices
- Supports multi-hop relaying
- Weather-resistant outdoor enclosure, for longer life and greater durability
- Mounting kits for pole-top and other above-ground installations
- Fully water-submersible version for below-ground installations in dense urban environments
- Battery backup for fault-tolerant operation

Specifications:

Communications	Data rate: 100 Kbps Frequencies: 902-928 MHz (North America) 915-928 MHz (Australia) 902-907.5, 915-928 MHz (Brazil) Spread spectrum technology: FHSS Transmitter output: 30 dBm Output impedence: 50 ohms Receiver sensitivity: -97 dBm for 1% PER Modulation: GFSK
Protocols/Security	Addressing: Internet Protocol version 6 (IPv6) Security: Secure Hash Algorithm 256 bit (SHA-256) RSA-1024 and/or ECC-256 Encryption: Advanced Encryption Standard (AES-128 or AES-256)
Physical Interfaces	Antenna connector: N Type, Female Antenna: J-Pole or High-Gain Directional, N-type, Female
Power	Input range: 96 to 277 VAC, 50 to 60 Hz Power consumption: Idle / Maximum Relay: 2.5 W / 7 W Relay with battery: 2.5 W / 8 W Battery backup option: > 8 hr operation
Environmental	Operating temperature: -40°C to +85°C (-40°F to +185°F) Humidity: 0% to 95%, non-condensing
Mechanical	Relay Dimensions: 23 cm (9") L x 20 cm (8") W x 10 cm (4") H Weight: 1.37 kg (3 lbs.) Enclosure: IP65, white, aluminum Underground Relay Dimensions: 34 cm (13.5") x 29 cm (11.5") x 15 cm (6") Weight: 5.2 kg (11.5 lbs) Enclsoure: IP67, Fiberglass Reinforced Polyester (FRP)
Mounting Kit Options	Wooden pole Concrete pole Light pole Wall Pad-mounted enclosures
Approvals	FCC: Part 15.247 Industry Canada: RSS-210 ANATEL Others: IEC/UL 60905, IEC 61000-4

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