TESLA DUO

Description

Tesla Duo two-way water endpoints are cutting-edge devices for smart water AMI network applications with a drive-by AMR backup. Each endpoint can use multiple existing public cellular networks, or a point to multipoint Licensed Private Network (LPN) in the 450 – 470 MHz band to deliver meter data to the utility securely and with great flexibility. The Tesla Duo can use the LPN where towers and other existing utility assets are present or in areas with poor cellular network coverage, while using public cellular networks in less densely populated areas to create the most cost-effective solution. While the networks can be used independently, the redundancy of multi-network coverage creates an extremely effective future evolving Multi-Network as a Service (M-NaaS) option not achievable with a single network. Each Tesla Duo can be read by drive-by AMR as a backup or primary read strategy.

Functionality

Operation: Tesla Duo water endpoints communicate with the encoder to capture interval read data and meter status information. The endpoints then send read and endpoint status information over the licensed private network or public cellular networks. Two-way communication provides for time synchronization, on demand reads, over the air firmware updates, and remote shut off valve control. Multi-network coverage gives the utility the flexibility to install Collectors in places that make sense, while utilizing existing public cellular networks in other parts of the system, or switch from one network to another after install for future network optimization. This speeds installations while presenting multiple options to overcome future system environmental changes such as vegetation growth, building construction, or expansion as a system evolves.

Activation: Tesla Duo water endpoints are shipped in an inactive, non-transmitting state. After installation, the endpoints begin communicating data once the encoder indicates water has been used. Alternatively, a magnet can be used to manually activate the endpoints and verify the encoder connection.

Data Storage: Tesla Duo endpoints store 120 days of hourly data.

Output Message: Tesla Duo water endpoints communicate a unique serial number, meter reading data, and applicable status indicators such as flags and alarms.

Application

Read Strategies: Tesla Duo water endpoints can send AMI meter related infomation though public cellular networks, a Licensed Private Fixed network, or switch between the read strategies with no programing required. A Multi-Network as a Service approch can also be chosen to utilize all network options simultaneously for redundancy and optimization. As an additional level of redundancy the Tesla Duo can also be read though a Drive-by AMR read stratagy.

Configurations: Tesla Duo water endpoints can be installed in indoor, outdoor and pit lid applications. As with all radio frequency (RF) endpoints of any manufacturer, mounting through or under a metallic pit lid has a negative impact on propagation and product performance. The electronics and battery assembly are fully encapsulated in epoxy for environmental integrity. The endpoint is available with a connector assembly for ease of installation.

2912 South Access Rd.
Longview, TX 75602
PH: 903-753-3456
Fax: 903-753-5678
RG3METER.COM

Specifications

Approvals	Part 90, part 15, part 22, part 24, and part 27 of the FCC rules
Battery	Non-replaceable D-Cell lithium thionyl chloride with HLC capacitor for extended life
Battery life	20 years[1]
Connection to register	Bare wire (splice), RG3 or industry-standard connectors
Data resolution	4–8 digits[2]
Encoder disconnect	An alarm is sent if communication with the encoder is interrupted as in the case of theft or vandalism
Endpoint to endpoint synchronization	< 1 min
Firmware updates	Over the air (OTA) firmware updates can be performed remotely via the LPN or onsite through Tesla Drive software
Inputs	Single or dual port
Installation Locations	Interior or exterior wall mount, pit/vault, through-the-lid[3]
Meter encoder compatibility	All RG3 meter and encoders as well as most major manufacturers of water meters[4]
Meter flags and alarms	Backflow, Tamper, Leak, Diagnostic and Battery Status flags as well as supporting extended flags and alarms from multiple meter manufacturers[4]
Meter interface	Pulse or Encoder
Network compatibility	Tesla Net
Network topology	450 – 470 MHz Licensed Private Network (point to multi-point) and AT&T, Verizon, and T-Mobile public cellular LTE-M networks
Network type	Two-way[5]
On-board storage	120 days of hourly read data
Operating humidity	0%-100% non-condensing
Operating temperature	-40˚ to 185˚F (-40˚ to 85˚C)
Physical characteristics	Height 6.5″ Width of Threads 1.8″ Width of Cap at Threads 1.98″ (2″ pit lid hole required) Dimensions of Base 3.2″w x 3.1″ d Weight: 1 lb Color: black
Remote shut-off	Open, close, partially closed – controlled from TeslaMDM or TeslaDrive software[6]
Security	AES 256 encryption and authentication
Transmit / receive frequency	450-470 MHz FCC LPN and / or LTE-M public cellular networks
Warranty	20 years[1], [7]

[1] Battery life warranty invalid if product is stored more than 1 year before installation and activation
[2] Reports all digits that are electronically available from register
[3] Pit/vault installation under non-metallic lid
[4] Contact factory for specific meters and flags/alarms supported
[5] Two-way communication for time synchronization, remote configuration, on-demand reads, historical data log retrieval, valve control, and firmware over the air (OTA) updates
[6] Contact factory for specific valves supported
[7] Refer to RG3 standard warranty for details

RG3 Meter Company
2912 South Access Rd.
Longview, TX 75602
PH: 903-753-3456
Fax: 903-753-5678
RG3METER.COM