

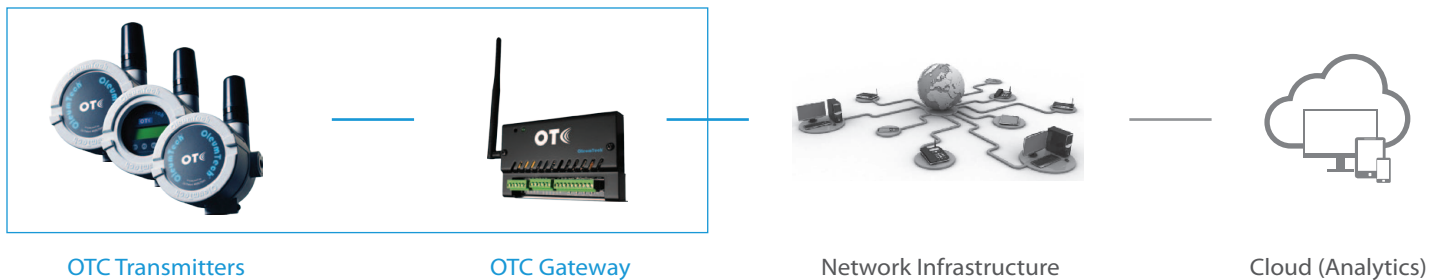


▶ Highlights

- Wirelessly gather/distribute sensor data
- Map I/O anywhere within the network
- Modbus master/slave functionality
- 1x configurable Serial port (RS232/RS485)
- 1x dedicated RS485 port (RJ-45)
- 4x analog inputs (0-5 Vdc)
- 2x discrete inputs & 2x discrete outputs
- -40 °C to 80 °C
- 900 MHz or 2.4 GHz radio option
- Secure AES encryption
- Class I, Division 2 (Zone 2) certified



US Patent #6967589



OTC Transmitters

OTC Gateway

Network Infrastructure

Cloud (Analytics)

▶ Serial Gateway with Onboard I/O

Primary Data Collection Point

The OleumTech® DH1 Wireless Gateway plays an integral role in the OTC Sensor & I/O Network by being able to wirelessly collect critical process data from OTC Wireless Transmitters, I/O Modules, and other Gateways. The data is stored in its 320-point Modbus register holding table.

Peer-to-Peer Advanced Networking

In the OTC Sensor Network, multiple Wireless Gateways can be placed into the same network to form a much larger sensor network. All Gateways can have their own set of Transmitters and they have the ability to communicate with other Gateways in the network. With this powerful advantage, you can setup sophisticated I/O distribution systems and migrate data with extreme flexibility, scalability and ease.

Serial Interface

With the provided RS232/RS485 configurable Serial port, the DH1 can virtually interface with any third-party Modbus device either as a master or slave device. The DH1 can also be configured as a LevelMaster ASCII slave or ROC Link master. Its dedicated RS485 port (RJ-45) can be utilized for connecting to other Serial devices.

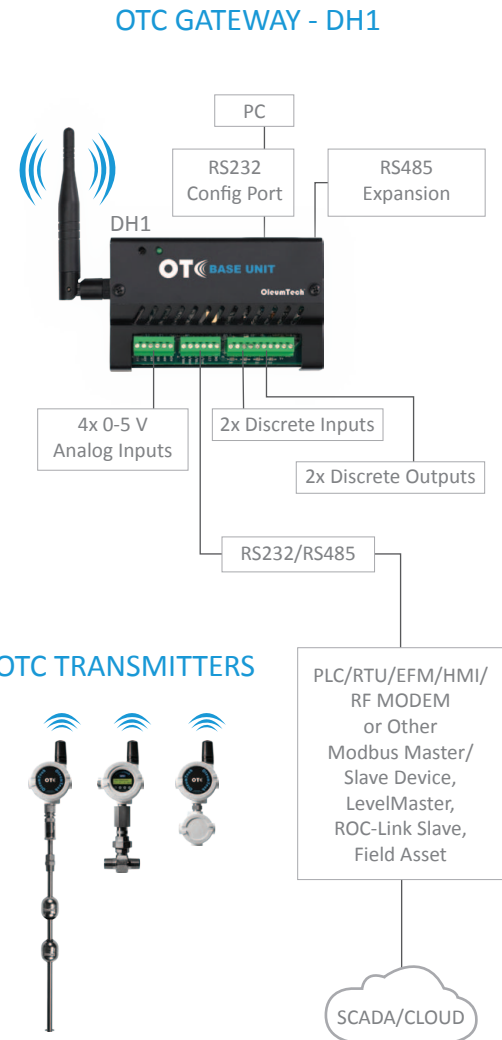
Onboard I/O

Unlike other OTC Wireless Gateways, the DH1 is equipped with onboard I/O comprised of 4x analog inputs (0-5 Vdc), 2x digital inputs, and 2x digital outputs. If additional I/O points are needed, OleumTech offers a Modular I/O Expansion System via RS485 connection for use with the DH1 for added versatility.

Technical Specifications

HARDWARE FEATURES	
Device Functionality	· Wireless Gateway with Onboard I/O and I/O Expansion Capabilities
Embedded Controller	· 32-bit Low Power ARM7 Microcontroller with Internal FLASH (Field Upgradeable)
Serial Interfaces	· RTU Port (RS232/RS485) Terminal Block · Modbus Master/Slave, LevelMaster ASCII Slave, ROC-Link Master (Supports Opcodes 17 and 10) · RS485 Expansion Port - Modbus Master or Slave (RJ-45)
I/O Interfaces	· 4x Analog Inputs (0-5 VDC) with 12-bit ADC · 2x Discrete Inputs (0-24 VDC) for Dry Contact Relay or Open-Drain Output Devices · 2x Open-Drain Outputs (Imax = 240 mA (Continuous Sink Current @ 80 °C), Vmax = 24 Vdc) Devices for Controlling External Devices (Valves, Relays, Etc.)
Configuration	· Config / Debug Port - RS232 Slave Only (RJ-45) / BreeZ® Software for PC
Device Diagnostics	· Health Tag: Supply Voltage
WIRELESS COMMUNICATIONS	
Type: 900 MHz / 2.4 GHz	· ISM Band, Spread Spectrum · 900 MHz: FHSS (Frequency Hopping), FSK, AES Encryption 256-bit (900 MHz), 128-bit (915 MHz) · 2.4 GHz: DSSS (Direct-Sequence), AES Encryption 128-bit
Output Power	· 900 MHz: 9600 bps / 115.2 kbps ; 2.4 GHz: 250 kbps · 900 MHz: Up to 1000 mW; 2.4 GHz: 63 mW · 900 MHz: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps / 2.4 GHz: -100 dBm @ 250 kbps
RF Range	· 900 MHz: Up to 40 Miles / 64 km with Clear Line of Sight ¹ · 2.4 GHz: Up to 5.7 Miles / 9.2 km with Clear Line of Sight ¹
CERTIFICATIONS & COMPLIANCE	
EMC/EMI	· FCC Part 15 (USA) · IC ICES-003 (Canada)
Safety	· Class I, Division 2, Groups A, B, C, D T4; Ex nA IIC T4 · Class I, Zone 2 AEx nA IIC T4 / 9-30 Vdc, Ta = -40 to 176 °F (-40 °C to +80 °C) · ATEX: Sira 14ATEX4143X; Ex nA IIC T4 Gc · IECEx: SIR 13.0055X; Ex nA IIC T4 Gc / 9-30 Vdc, Ta = -4 to 176 °F (-20 °C to +80 °C)
MECHANICAL SPECIFICATIONS	
Dimensions	· 4.9" (W) x 3" (H) x 1.4" (D) / 124.5 mm (W) x 76.2 mm (H) x 35.6 mm (D)
Package Dimensions	· 8" (W) x 6" (H) x 2.5" (D) / 203 mm (W) x 152 mm (H) x 63 mm (D)
Package Weight	· ~1 lbs / 0.4 kg
Mounting	· DIN Rail Mountable with Height Adjustability
ELECTRICAL SPECIFICATIONS	
DC Power Input	· 9-30 Vdc
Average Power Input	· 2 Watt
Power Consumption @ 12 Vdc	· Idle: 100 mA; Configuration: 110 mA; Transmission: 350 mA @ 1 W
GENERAL SPECIFICATIONS	
Operating Conditions	· Temperature: Class I, Div 2: -40 °F to 176 °F (-40 °C to 80 °C) · ATEX/IECEx: -4 °F to 176 °F (-20 °C to 80 °C) · Humidity: 0 to 99 %, Non-Condensing
Warranty	· 2-Year Parts and Labor
Country of Origin	· USA
ORDERING INFORMATION	
Model Numbers	· 900 MHz: WG-0900-DH1; 2.4 GHz: WG-2400-DH1
Wirelessly Connects To	· OTC Wireless Devices (Gateways, Transmitters, I/O Modules)
Configuration Cable	· SX1000-CC2, 20-ft All-in-One Configuration Cable

Networking Diagram



¹ The maximum RF range data was collected under optimal test conditions, including a clear line of sight between antennas. Actual wireless RF range may vary depending on location, RF interference, weather, antenna type, cable type, and line of sight.