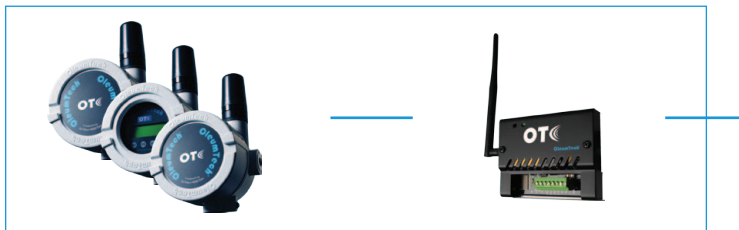DATASHEET
## DH2

OTC



## Highlights

- Wirelessly gather/distribute sensor data
- Map I/O anywhere within the network
- Modbus master/slave functionality
- 1x configurable Serial port (RS232/RS485)
- -40 ˚C to 80 ˚C
- 900 MHz or 2.4 GHz radio option
- Secure AES encryption
- Class I, Division 2 (Zone 2) certified

C US  0518  Ex II 1G  IEC IECEx

US Patent #6967589



OTC Transmitters · OTC Gateway · Network Infrastructure · Cloud (Analytics)

## Wireless Gateway with Serial Connectivity

### Primary Data Collection Point

The OleumTech® DH2 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 1920-point Modbus register holding table.

### Serial Interface

With the provided RS232/RS485 configurable Serial port, the DH2 can virtually interface with any third-party Modbus device either as a Modbus master or slave device. The DH2 can also be configured as a LevelMaster ASCII slave or ROC Link master. OleumTech offers Serial I/O Expansion Modules for use with the DH2 for added functionality.

### 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.
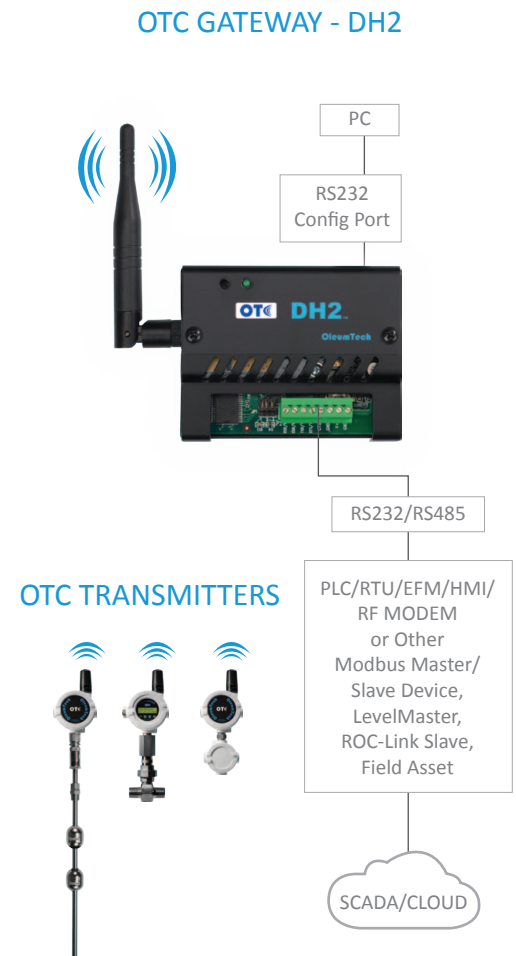
### Reliable, Trusted

The DH2 has been widely used for OTC Network deployments for over a decade, proving its reliability and robustness in harsh oilfields. The DH2 is the standard of excellence, resembling OleumTech's commitment to quality and innovation.

# Technical Specifications

# Networking Diagram

## HARDWARE FEATURES

| | |
|---|---|
| Device Functionality | · Wireless Gateway |
| 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) |
| 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 |
| Bit Rate | · 900 MHz: 9600 bps / 115.2 kbps ; 2.4 GHz: 250 kbps |
| Output Power | · 900 MHz: Up to 1000 mW; 2.4 GHz: 63 mW |
| Receiving Sensitivity | · 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 | · 3.8" (W) x 3" (H) x 1.4" (D) / 96.5 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 | · Starting from SN SM11266715: 9-30 VDC; Prior to SN SM11266715: 9-24 VDC |
| Average Power Input | · 2 Watt |
| Power Consumption @ 12 Vdc | · Idle: 85 mA; Configuration: 45 mA; Transmission: 350 mA |

## 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-DH2; 2.4 GHz: WG-2400-DH2 |
| Wirelessly Connects To | · OTC Wireless Devices (Gateways, Transmitters, I/O Modules) |
| Configuration Cable | · SX1000-CC2, 20-ft All-in-One Configuration Cable |

### OTC GATEWAY - DH2

PC

RS232 Config Port

OTC DH2™
OleumTech

RS232/RS485

### OTC TRANSMITTERS

PLC/RTU/EFM/HMI/ RF MODEM or Other Modbus Master/ Slave Device, LevelMaster, ROC-Link Slave, Field Asset

SCADA/CLOUD

[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.

ISO 9001 REGISTERED COMPANY

MADE IN USA