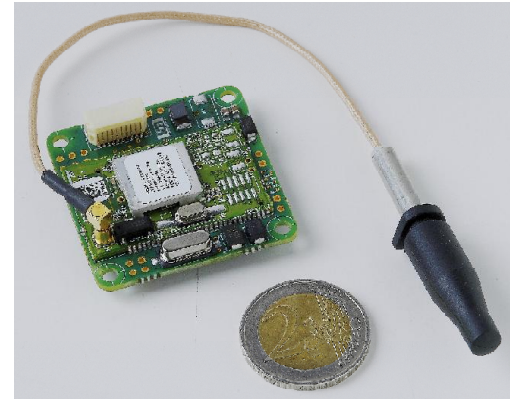


## T810, a WirelessHART™ built-in module with Modbus™ interface

### Summary:

- ◆ WirelessHART slave OEM module
- ◆ WirelessHART compliant with proven technology
- ◆ Based on Linear Technology / Dust Networks radio module
- ◆ Sensor communication through Modbus
- ◆ 3-12 V supply voltage
- ◆ Tailored for battery operated devices
- ◆ Average power consumption in the micropower range
- ◆ Battery life of several years
- ◆ Small size of 42mm x 42mm
- ◆ Variable and status simulation for better testability



### General description

The **T810** is an **OEM board** for battery-powered WirelessHART applications.

The **T810** supports a wired HART configuration channel. The configuration channel is used for the purpose of joining the network and defining burst and event notification strategy.

Burst is the method used for sending measurements through the wireless network, while event notifications are used to signal asynchronous status changes to the host.

Four Burst command configurations are supported. The device will go into sleep mode between each burst (report of measured value).

The Real Time Clock is active when connected to a WirelessHART network.

Battery voltage supervision is supported, battery life estimation is optional.

### T810 applications:

The device is in particular suitable for monitoring and supervision purposes. Examples of use:

- ◆ Gas detectors
- ◆ Analysers
- ◆ Positioners

- ◆ Pressure, Level, Flow measurements

### T810 specifications:

- ◆ Mechanical size 42mm x 42mm
- ◆ Mounting option Four 3 mm screws
- ◆ Mousing option 2.54 mm standard pinrows
- ◆ Operating temperature range -40 °C to + 85 °C
- ◆ Input supply voltage range 3-12 Vdc
- ◆ The T810 can act as both an endpoint and a router, increasing the network reliability
- ◆ The IEEE 802.15.4-certified radio operates on the 2.4 GHz global license-free band
- ◆ RF certifications for FCC, IC, and CE
- ◆ AES-128 bit encryption (certified NIST FIPS-197 compliant)

### HART Commands included:

- ◆ All Universal Commands
  - ◆ Read variables
  - ◆ Read and write TAG name
  - ◆ Read range values and sensor limits
  - ◆ Read and write user messages and date
- ◆ Common Practice Commands
  - ◆ Burst mode control
  - ◆ Event Notification control
  - ◆ Variable and status simulation
- ◆ Device Specific Commands

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- ◆ Device Specific Commands for factory set-up

Device Specific Commands are included for factory set-up. To operate on these commands the user needs the HART Master program, SW01, available from Fint. These are commands for setting register addresses and Modbus settings.

### Power consumption

The power consumption depends very much on the configuration and connected instrument, as well as the supply voltage.

An isolate T810, not connected to any other device (programmer, Modbus instrument), and configured to do nothing, will have a power consumption around 500 uW with a 5V supply. One example usecase (4second burst period connected to a wireless network with low activity) would land the device at around 1.7mW average.

### T810, HART features:

- ◆ 8 configurable Device Variables
- ◆ 4 Dynamic Variables, PV, SV, TV and QV.
- ◆ Dynamic Variables are mappable to Device Variables
- ◆ FSK Maintenance port for configuration
- ◆ Burst on Wireless channel
- ◆ Event Notification on Wireless channel (status reporting)
- ◆ Status Simulation
- ◆ Configuration of Modbus communication

### Starter kit/development kit:

For evaluation purposes Fint offers the ST81 WirelessHART Starter kit. It comes with 2,5 or 10 T810s and a gateway from Emerson or Phoenix or a Manager from Linear Technologies.

### Set-up

