T910
DIN rail mounted Modbus™ RTU to WirelessHART ™ adapter

Summary:

- **Configurable WirelessHART slave module with Modbus Master**
- **Publish variables and status indicators from the Modbus device over WirelessHART network**
- **Modbus RTU communication over RS 485**
- **24 V supply voltage**
- **Variable and status simulation for better testability**
- **LEDs for power, join status, bursting and Modbus traffic**
- **Based on Fint's embedded T810 WirelessHART converter**
- **Connector for Handheld Configurator**

General description

The **T910** is a configurable, DIN rail mounted module for interfacing Modbus devices to WirelessHART. The interface allows up to 8 device variables (floating point or integer) and an extensive array of device status indicators to be passed from the Modbus device over the WirelessHART network.

The T910 includes a wired HART communication channel to provision the device for joining the WirelessHART network and configure the strategy for publishing variables. The variable publishing strategy can be configured to be either based on time or triggered by an event.

Burst mode is used to publish device variables based on time, while event notification is used to trigger variable publishing based on asynchronous status change or the variable hits a predefined limit.

Four Burst command configurations are supported. The Real Time Clock is active when connected to a WirelessHART network.

T910 applications

The device is in particular suitable for connecting and integrating Modbus devices to WirelessHART networks. Examples of use include:

- Process measurement devices with Modbus RTU output
- Remote monitoring and control of micro PLC
- Positioners, detectors, analyzers
- Pressure, level, flow, temperature measurements

T910 specifications

Mechanical size	114,5 mm x 99 mm
Module width	22,5 mm
Mounting	DIN rail
Operating temperature range	-40 °C to + 85 °C
Input supply voltage range	24 Vdc
Modbus port	RS485

- The T910 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-128bit 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
  - Device Specific Commands for set-up

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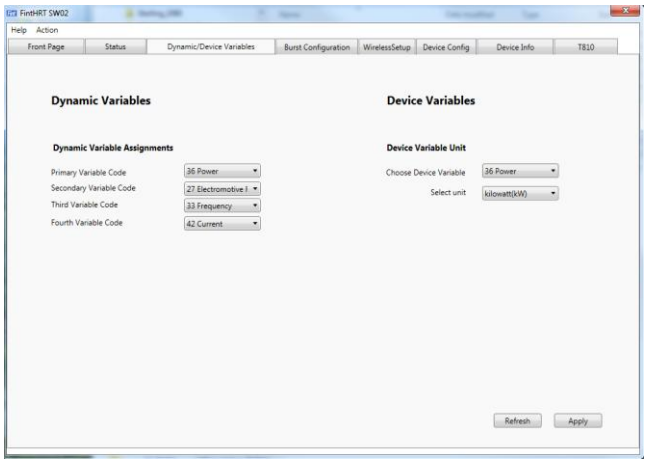
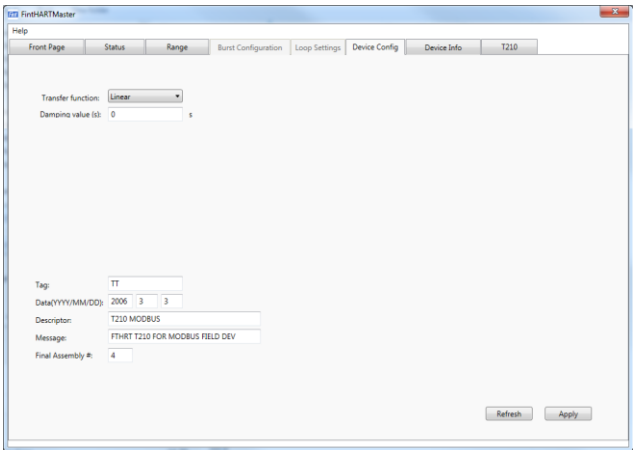
Device Specific Commands are used to configure and set-up the device for specific application. To operate on these commands the user applies the SW02 software program from Fint. These are commands for setting register addresses and Modbus settings, see examples below.

T910, HART features:

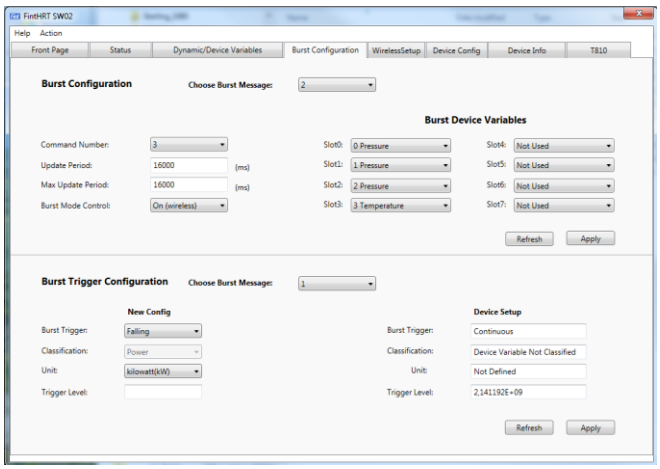
- 8 configurable floating point or integer Device Variables
- 4 Dynamic Variables, PV, SV, TV and QV.
- Device Variables are mappable to Dynamic Variables
- Up to 14 bytes for device specific status indicators
- FSK Maintenance port for configuration
- Burst mode on Wireless channel
- Event Notification on Wireless channel (status reporting)
- Status Simulation
- Configurable Modbus communication



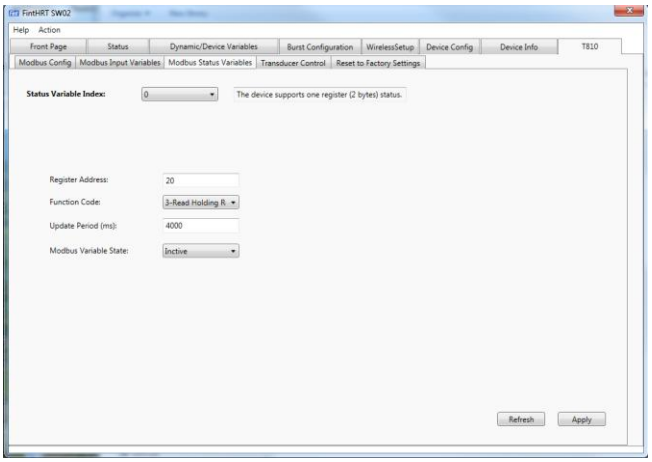
The menu **Dynamic Variable Assignment** is used to configure which Device Variables are assigned to the four Dynamic variables.



The menu **Device Variables** is used toconfigure the HART device parameters “TAG”, “Descriptor”, “Message” “Final Assembly number” and “Date”.

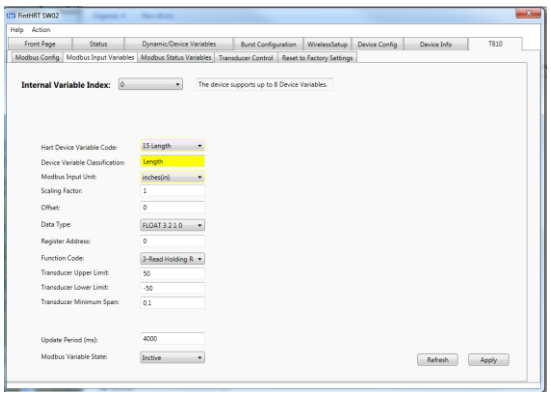


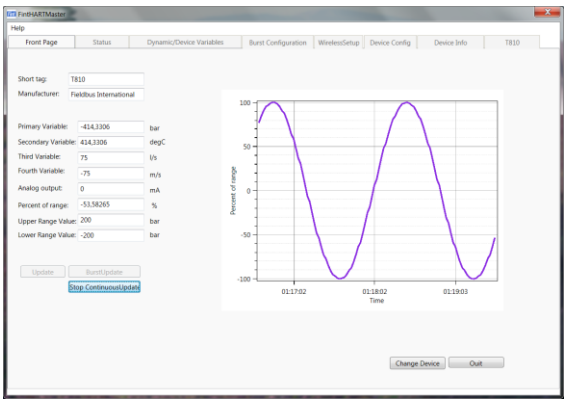
The Dynamic Variables are published to the WirelessHART gateway using Burst messages. The Burst messages can be published continuously or on an event depending on the nature of the variable.
The **Burst Configuration menu** is used to configure the conditions for publishing Burst messages



Modbus Staus variables menu

Status indicators are transmitted by HART Command 48. This can be configured into a Burst Message. By using this menu it is possible to take status information from the Modbus instrument and fill that into Command 48.





Modbus Input Variables

The variables may be located anywhere in the Register map of the Modbus instrument. The Register address must be specified. The variables can be either floating point or integer.
The T910 supports in total eight variables. That means that eight variables can be read from the Modbus registers in the instrument to which it is connected. These Internal variables are selected and configured one by one by selecting Internal Variable Index.

The **SW02** contains a main dialogue box where the continuously updated variable is shown as a digital value and graphically.

LED indicators