

Configuration HART module

INCLUDED IN THE SCOPE OF DELIVERY DIQ/S 281-HART

This document provides an overview of the configuration of the Fint T310 HART module, used as a Modbus-HART converter in the DIQ/S 281-HART.

The most important settings required to operate the HART module are covered. Some of the settings are already preconfigured in the scope of delivery and enable the query of sensor values. Special adjustments are to be made with the FINTHRT SW02 software.

On the next pages the changes of the following settings are described:

- Changing the transmited sensor information
- Selecting the unit
- Changing the measuring range of the sensor
- Scaling of the mA output

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Xylem factory configuration

- Available at this <u>link</u> under Downloads -> Software -> Standard Configuration
- The main factory settings are:
 - Device Variable 0: Main measured value of the connected IQ sensor
 - Device Variable 1:
 - Secondary measured value of the connected IQ sensor
 - Device Variable 2: Sensor status of the connected IQ sensor
 - Device Variable 3: Measured value status of the main measured value
 - No unit maintained
 - Measuring range of the connected sensor 0...100,000
 - Scaling of the current output: 0...200 corresponds to 4...20 mA

Prerequisites for changing the configuration

- Modbus HART Converter Fint T310
- Laptop or PC
- PC software FINTHRT SW02 (specific HART master), available at this <u>link</u> under Downloads -> Software -> Configuration Software
- HART module for connecting converter and PC



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Starting FNTHRT SW02 software

Start-up Settings Fint WirelessHART WirelessHART
COMMUNICATION ANDTOCOL
Connect Exit
Start-up Settings
Use address 0, broadcast
Scan for Devices
Primary Master
 Secondary Master
3 v Selected Comport
3 Selected Comport Scan for Comports
3 Selected Comport Scan for Comports
3 Selected Comport Scan for Comports
3 Selected Comport Scan for Comports

Changing the transmitted sensor information

The transmitted settings can be adjusted in the "Device Variables" tab. For this purpose, the values to be transmitted can be selected for the variables 0 to 3.

able Configuration evice Variable 0: Device Variable N ~ vice Variable 0: Not Used ~ evice Variable 1: Device Variable N ~	Device Variab Class For Dev	aling factor	Status Sc	ge config lata type	Factory Ran	vice Variables	fodbus Devi
able Configuration evice Variable 0: Device Variable N ~ vice Variable 0: Not Used ~ evice Variable 1: Device Variable N ~	Device Variab Class For Dev	aling factor	Sk	lata type			
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vice Variable 0: Not Used ~ vice Variable 1: Device Variable N ~			v 1	LOAT 3 2 1 0		4	Device Variable 0:
evice Variable 1: Device Variable N ~	Unit For Devi		× 1	LOAT 3 2 1 0		6	Device Variable 1:
	Class For Dev		× 1	SHORT 10		240	Device Variable 2
vice Variable 1: Not Used *	Unit For Devi		× 1	SHORT 1 0		243	Device Variable 3:
evice Variable 2: Device Variable N *	Class For Dev		7	st.	ta register form	are given in dat	Register adresses ar
vice Variable 2: Not Used *	Unit For Devi				40 001	olding register -	Data register = Hole
evice Variable 3: Device Variable N *	Class For Dev		_				
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vice variable 3: Inot oneo	Unit For Devi						O Code 3
							Code 4
						ole Codes	Transmitter Variable
				٣	0	Coder	Primary Variable Co
				٣	1	le Code:	Secondary Variable
						4	Third Mulphin Code
				~	2	0e.	Inito variable code
vice Variable 3: Not Use	Unit For Devi			v	0	sie Codes Code: Ie Code:	Function Code Code 3 Code 4 Transmitter Variable Primary Variable Co Secondary Variable Co

Install and open FNTHRT SW 02

- Switch to "Settings" tab
- Select COM port of the HART modem ("Selected Comport")
- Establish connection to the HART device with "Connect"

Factory setting:

- Device Variable 0: Main measured value (Register 4)
- Device Variable 1: Secondary measured value (Register 6)
- Device Variable 2: Sensor Status (Register 240)
- Device Variable 3: Measured value status of the main measured value (Register 243)

Other values:

- Register 241: Status info
- Register 242: Measuring mode
- Register 244: Measured value status of the secondary measured value

Send settings to HART converter via "Apply".

Selecting the unit

For main and secondary measured values, units can also be selected in the "Device Variables" tab.

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These can be found in the following selection menus:

For main measurement value

For secondary measured value

- Class For Device Variable 0 Unit For Device Variable 0
- Class For Device Variable 1 Unit For Device Variable 1 •

Send settings to HART converter via "Apply".

Changing the measuring range of the sensor

The measuring range of the sensor can be set in the "Factory Range config" tab.

	Status	Rat	ige 8	Surst Configuration	Loop Settings	Device Config	Device Info	T310
Modbus	Device Vari	iables Fact	ory Range cor	nfig Status				
Sensor Lin	nits							
Upper Ser	nsor Limit	100						
Lower Sen	nsor Limit	0						
Minimum	Span	10						
Device Var	riable Index	0	v					
Note, that	values after Ref	fresh						
are represe	ented for Index	·0.						
Berne Co.								
Kange Cor	ofiguration							
PV Range	nfiguration s Source		Range	Source Local	v			
PV Ranger PV Ranger	nfiguration s Source er Option		Range S	Source Local	×			
PV Ranger PV Registe Modbus U	nfiguration s Source er Option Jpper Range Re	rgister Address	Range S Remote	Source Local Register Read/W	Registe	r adresses are giver	n in data register form	set.
PV Registe PV Registe Modbus U Modbus L	nfiguration s Source er Option Jpper Range Re Jower Range Re	rgister Address gister Address	Range : Remote	Source Local e Register Read/W	Registe Data re Data re	rr adresses are giver gister = Holding re igister = Input regis	n in data register form gister - 40.001 ter - 30.001	w.
PV Ranges PV Registe Modbus U Modbus L PV Upper	nfiguration s Source er Option Jpper Range Re Jower Range Re Range	rgister Address gister Address	Range 1 Remote 0 100	Source Local Register Read/W	* Registe Data re Data re	rr adresses are giver gister = Holding re gister = Input regis	n in data register form gister - 40.001 ter - 30.001	uč.
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Skaling of the mA output

The scaling of the mA output can be set in the "Range" tab.

Primary Variable Range Bunt Configuration Loop Settings Device Config Device Info T310 Primary Variable Range Unit: Not Used ~ Upper Range Value: 0 Lover Fange Value: 0 Upper Sensor Limit: 100 Sis	Primary Variable Range Burst Configuration Loop Settings Device Config Device Inflo Unit: Not Used ** Upper Range Value: 100 Upper Sensor Limit: 100 Upper Sensor Limit: 100 Lower Sensor Limit: 0 Sk								p Action
Primary Variable Range Unit: Not Used ~ Upper Range Value: 100 Lower Range Value: 0 Upper Range Value: 0 Lower Sensor Limit: 100 %	Primary Variable Range Unit: Not Used Upper Range Values: 100 Lower Range Values: 0 Upper Sensor Limits: 100 Lower Sensor Limits: 0 Sensor Limits: 0	T310	Device Info	Device Config	Loop Settings	Burst Configuration	Range	Status	Front Page Stat
Primary Variable Range Unit: Not Used ~ Upper Range Value: 100 Lower Range Value: 0 Upper reaction: 100 Lower Sensor Limit: 0 %	Unit Not Used Upper Range Values: 100 Lower Range Values: 0 Upper Sensor Limits: 100 Lower Sensor Limits: 0 Sensor Limits: 0								
Unit: Not Used ~ Upper Range Value: 100 100 Lower Range Value: 0 100 Upper Sensor Limit: 100 16 Lower Sensor Limit: 0 16	Unit Not Used Upper Range Value 100 Lower Range Value 0 Upper Sensor Limite 100 Lower Sensor Limite 0						riable Range	Primary V	P
Upper Range Value: 100 Lower Range Value: 0 Upper Sensor Limit: 100 % Lower Sensor Limit: 0 %	Upper Range Value 100 Lower Range Value 0 Upper Sensor Limite 100 1s Lower Sensor Limite 0 1s						lsed ~	Not	Unit
Lower Range Value: 0 Upper Sensor Limit: 100 % Lower Sensor Limit: 0 %	Lower Range Value: 0 Upper Sensor Limit: 100 % Lower Sensor Limit: 0 %							ange Value: 100	Upper Range Valu
Upper Sensor Limit: 100 % Lower Sensor Limit: 0 %	Upper Sensor Limit: 100 % Lower Sensor Limit: 0 %							ange Value: 0	Lower Range Value
Lower Sensor Limit 0 %	Lower Sensor Limit: 0 %					6		ensor Limit: 100	Upper Sensor Limi
						6		ensor Limit: 0	Lower Sensor Limi
		Defend							

Factory settings:

- "Upper Sensor Limit": 100.000
- "Lower Sensor Limit": 0 •

The values can be adjusted as required. It is recommended to set the upper and lower limit of the measuring range of the sensor. Send settings to HART converter via "Apply".

To adjust the current output, the sensor limits must be adjusted. Factory setting "Upper Range Value": 200 Factory setting "Lower Range Value": 0 "Upper Range Value" corresponds to 20mA "Lower Range Value" corresponds to 4mA Adjust as needed.

Send settings to HART converter via "Apply".

Loading the factory settings/saving your own configuration

The factory settings are loaded via the menu "Action", sub-item "Load Saved Configuration To Device".

Saving your own configurations via the sub-item "Saved Configuration To File".

HRT SW02							×
Action							
Reset Device		Burst Configuration	Loop Settings	Device Config	Device Info	T310	
Load Saved Configura	ation To Device	-					
Save Configuration To	o File 6						
		-					
Prin	nary Variable Range						
Unit:	grams(g) ~						
Upper Range Value:	200	9					
Lower Range Value:	0	9					
Upper Sensor Limit:	160	9					
Lower Sensor Limit:	120	9					
						Refresh	Apply
	HRT SW02 Action Action Reset Device Load Saved Configuration To Save Configuration To Prin Unit: Upper Range Value: Lower Range Value: Lower Sensor Limit: Lower Sensor Limit:	HRT SWO2 Action Reset Device Load Saved Configuration To Device Save Configuration To File Primary Variable Range Unit: grams(g) × Upper Range Value: 200 Lower Range Value: 0 Lower Range Value: 100 Lower Sensor Limit: 120	HRT SWO2 Action Ferst Device Save Configuration To Device Save Configuration To File Dimi: grams(g) Umi: grams(g) Umi: grams(g) g g Umi: 120 g g Lower Range Value 120 g g g g g g g g g	HRT SW2 Action Reset Device Load Saved Configuration To Device Save Configuration To File Primary Variable Range Unit: Upper Range Value: 200 9 Lower Range Value: 0 9 Lower Sensor Limit: 120 9	HIT SWC Action Reset Device Load Saved Configuration To Device Save Configuration To Frie Primary Variable Range Unit: grams(g) 9 Lower Range Value: 0 9 Lower Sensor Limit: 160 9 Lower Sensor Limit: 120 9	HRT SWC Action Reset Device Save Configuration To Device Save Configuration To File Primary Variable Range Unit: g Upper Range Value: 0 0 9 Upper Sensor Limit: 120 9	Attrime Revice Canfiguration To Device Info To To Save Configuration To File Runt Configuration To Save Canfiguration To File Device Canfig Device Info To To

Available under this <u>link</u> at Downloads -> Software -> Factory settings

Do you have further questions? Please contact our Customer Care Center:

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