SM500F Field mountable paperless recorder

Using ABB's paperless recorders to record data of a WirelessHART network

Measurement made easy



Introduction

This technical description describes how to connect one of ABBs paperless "Field mountable videographic recorder SM500F" with a WirelessHART gateway.

- Pepperl + Fuchs WHA-GW WirelessHART Gateway
- Emerson Process Management 1420 Smart Wireless Gateway

This gives an easy solution for any application where a fastand-easy-to-implement solution is desired. The technical description describes:

- Which data needs to be know from the gateway,
- how to configure the gateway Modbus mapping and
- how to configure the paperless recorder.

With a SM500F, 12 values could be recorded, viewable in 2 groups with 6 channels.



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1 WirelessHART Gateway

1.1 Pepperl + Fuchs WHA WirelessHART Gateway

1.1.1 Log In

To get access to the gateway these data must be available:

IP-Address:	Default Value 192.168.1.1	Notes
User name:	admin	
Password:	admin	

1.1.2 Modbus Setup

Device Name: Device Long Tag: NE107 Status:	WHA-GW WHART2 God	Device Revision: 2 Descriptor: <u>PUF_WIHART2</u> Timestamp of Status: 15:19:57	គ្
Parameter Hoentitation Hoen	Serial Bus Address: 0 Bus Address: 0 Baud Rate: 96000 Parity Bit: 0000 V Parity Bit: 0000 Stop Bit: 1 V Elternet		
Parameter Parameter Weines Communication Weines Communication Weines Communication Bysonering Instrument List Modules Margin Modules Margin Modules Margin Modules Margin Modules Margin Modules Margin Modules M	Swap option: Big Endian V Addressing Method: Manual V Read Modbus Registers Mode: Input Register only V		

Fig. 1: WHA WirelessHART Gateway - Modbus setup

Configure the Modbus settings as follows:

Parameter	Selection
Bus Address Selection	DIP switches
Bus Address	0
Baud Rate Selection	DIP switches
Baud Rate	9600
Parity Bit	odd
Stop Bit	1
Port Number	502
Swap option	Big Endian
Addressing Method	Manual
Read Modbus Registers Mode	Input Register only

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1.1.3 Modbus Mapping

1. Identify the desired device in the gateway and make sure it is operational.

	Device Name: \	VHA-GW						Device F	evision:	2		
Devic	ice Long Tag:	WIHART2						De	scriptor:	PUF_WIHART2		
N N	NE107 Status:	Good						Timestamp o	f Status:	16:35:55		
Parameter Identification Wireless Communic	ication	Operating Modes										
Operating Modes	es											Refresh
Wired Communication El Interfaces	ition	Long Tag	IO-Card	Channe	Device Type	Com. Stat	Dev. Status	Routing Device	Fast Pipe	Force Identification	Flush Cache	Delete
E Protocols		E WHART2	251	1	WHA-GW							
E Engineering		 00-01-12_RED 	1	0	1A9B			2				
Instrument List Modbus Mapping		 00-01-0A_GREEN 	4	0	1A9B			v				
- Modbus Settings	ps 🛛	 00-01-0D_YELLOW 	5	0	1A9B	V		~				
Input Status		 T3101426 	7	0	1A9B			v				
Topology View		 T3101783 TTF30D-W 	8	0	1A9B			v				
- Reset		 00-01-13_BLUE 	2	0	1A9B	V		~				
- Self Test - About - Firmware upgrade - Change Password - Upload Certificate - Measurement												

Fig. 2: Identify the desired device

2. Ensure the device is bursting the expected values. Refresh the site after three update cycles to ensure the number of received packets increase.

Device Name:	WHA-GW					Device	Revisi	on: 2		
Device Long Tag:	WIHART2					De	script	tor: PUF_WIHART2		
NE107 Status:	Good					Timestamp o	of Stat	us: 16:44:35		
Parameter Identification Wireless Communication Setup	Burst Lists									
Operating Modes										Refresh
Wired Communication E-Interfaces	Long Tag	IO-Card	Channel	Device Type	Com. Status	Dev. Status	+	Burst command	Num.	Packets
E Protocols	E WHART2	251	1	WHA-GW						
- Identification	• 00-01-12_RED	1	0	1A9B			-	Cmd 9 Read Device Variables with Status	2184	
Wireless Communication								Cmd 48 Read Additional Device Status	275	
Details	• 00-01-0A GREEN	4	0	1A9B			+			
Burst Lists	• 00-01-0D YELLOW	5	0	1A9B			+			
Wired Communication	• T3101426	7	0	1A9B			÷			
Engineering Instrument List	 T3101783 TTE300.W 	8	0	1A9B			+			
Modbus Mapping	* 00.01.13 BUIE	2	0	1A9B			+			
Modous Settings Input Register Topology View Capacity Vie	* 0401+15 BLUE		v							

Fig. 3: Ensure the device is bursting the expected values

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3. Map the Input Register. Select a starting register which has at least one free input registers following.

Device Name: Device Long Tag: NE107 Status:	WHA-GW WIHART2 Good					Device Revision: 2 Descriptor: PUF_WIHART2 Timestamp of Status: 11:26:14		
Parameter Identification B-Wireless Communication B-Wireless Communication D-Wirel Communication O-Diagnostics D-Englineering	Modbus Blo	ock Editor:	Input Register					
- Instrument List Modbus Mapping	Table	Generat	e					
Modbus Settings Input Status	Register	Endregister	Long Tag	IO-Card	Channel	Value	X	
-Input Register	1	34						
-Additional Functions	35	36	00-01-DA_GREEN	4	0	PV		
Measurement	37	38	00-01-0A_GREEN	4	0	sv		
	39	40	00-01-0A_GREEN	4	0	TV	×	
	41	42	00-01-0A_GREEN	4	0	QV	×	
	43	44	00-01-0A_GREEN	4	0	Battery Life	×	
	45	45	00-01-0A_GREEN	4	0	Extended Device Status	×	
	46	47	00-01-0D_YELLOW	5	0	PV		
	48	49	00-01-0D_YELLOW	5	0	SV		
	50	51	00-01-0D_YELLOW	5	0	TV	×	
	52	53	00-01-0D_YELLOW	5	0	QV		
	54	55	00-01-0D_YELLOW	5	0	Battery Life	×	
	56	56	00-01-0D_YELLOW	5	0	Extended Device Status		
	57	78						
	79	80	T3101426	7	0	PV		
	81	82	T3101426	7	0	SV		
	83	84	T3101426	7	0	TV	×ř	
	Regi	ster	Info					

Fig. 4: Map the Input Register

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4. Click into the "Long Tag" cell and select the desired device from the drop-down list.

Device Name: Device Long Tag: NE107 Status:	WHA-GW WIHART2					Device Revision: Descriptor: Timestamp of Status:	2 PUF_WIHART2 11:41:17		i i i i i i i i i i i i i i i i i i i
Parameter Identification Wireless Communication Wireless Communication Urder Communication Diagnostics	Modbus Ble	ock Editor:	Input Register]					
- Overview - Details	Table	Generat	te						
Burst Lists	Register	Endregister	Long Tag	IO-Card	Channel	Value		×	
Topology View Wired Communication	1	34	WiHART2						
Engineering	35	36	00-01-12_RED 00-01-0A_GREEN	4	0	PV		×	
Modbus Mapping	37	38	00-01-0D_YELLOW T3101426	4	0	SV		×	
- Modbus Settings	39	40	T3101783 TTF300-W 00-01-13 BLUE	4	0	TV		X	
- Input Register	41	42	00-01-0A_GREEN	4	0	QV		×	
Topology View	43	44	00-01-0A_GREEN	4	0	Battery Life		×	
Measurement	45	45	00-01-0A_GREEN	4	0	Extended Device Status		X	
	46	47	00-01-0D_YELLOW	5	0	PV		×	
	48	49	00-01-0D_YELLOW	5	0	SV		×	
	50	51	00-01-0D_YELLOW	5	0	TV		×	
	52	53	00-01-0D_YELLOW	5	0	QV		×	
	54	55	00-01-0D_YELLOW	5	0	Battery Life		×	
	56	56	00-01-0D_YELLOW	5	0	Extended Device Status		X	
	57	78							
	79	80	T3101426	7	0	PV		×	
	81	82	T3101426	7	0	sv		×	
	83	84	T3101426	7	0	TV		××	
	Reg	ister	Info						

Fig. 5: Select the desired device

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5. Click into the "Value" cell and select a value you want to read.

	Device Name: Device Long Tag:	WHA-GW	2				Device Revision: 2 Descriptor: PUF_WIHART2	
Parameter Identificatio Wireless C Wireless C Wired Corr Diagnostics	me to / Status:	Modbu	s Block Editor:	Input Register			imestamp or status: 11,42.17	
Wireless C Overvie Overvie Details	ommunication w	Tal	ole Genera	te	_	_		
- Burst Li	sts iy View	Registe	r Endregister	Long Tag	IO-Card	Channel	Value	
Wired Com	munication	1	1	00-01-12_RED	1	0	Loop Current	×
Instrument	List	2	34				Percent Range PV	
Modbus M Modbus	apping	35	36	00-01-0A_GREEN	4	0	SV TV	
- Input St	atus	37	38	00-01-0A_GREEN	4	0	QV Device Variable	
Input Re	agister	39	40	00-01-0A_GREEN	4	0	Battery Life Slot 0 Data Time Stamp	
Additional Fur	nctions	41	42	00-01-0A_GREEN	4	0	Device Status Extended Device Status	
-Measurement		43	44	00-01-0A_GREEN	4	0	Device Status & Extended Device Status	
		45	45	00-01-0A_GREEN	4	0	Modbus Status	
		46	47	00-01-0D_YELLOW	5	0	PV	×
		48	49	00-01-0D_YELLOW	5	0	SV	×
		50	51	00-01-0D_YELLOW	5	0	TV	\bowtie
		52	53	00-01-0D_YELLOW	5	0	QV	\mathbf{X}
		54	55	00-01-0D_YELLOW	5	0	Battery Life	\mathbf{X}
		56	56	00-01-0D_YELLOW	5	0	Extended Device Status	\mathbf{X}
		57	78					
		79	80	T3101426	7	0	PV	×
		81	82	T3101426	7	0	sv	××
			Register	Info				
		<u> </u>	0	Map entry incomplete.				

Fig. 6: Select the value to read

6. After selecting device and value confirm the mapping by pressing enter.

	Device Name:	WHA-GW					Device Revision: 2	
	NE107 Status:	Good					Timestamp of Status: 11:43:37	
Parameter Identification B: Wireless Corr B: Wired Comm Diagnostics Identification B: Wireless Corr	nmunication iunication	Modbus E	Block Editor:	Input Register rt Refresh Apply				
- Overview		Table	Generat	e				
- Burst List	3	Register	Endregister	Long Tag	IO-Card	Channel	Value	×
 Topology /ired Comm 	view unication	1	2	00-01-12_RED	1	0	PV	×
gineering	et.	3	4	00-01-12_RED	1	0	SV	
Modbus Map	ping	5	6	00-01-12_RED	1	0	TV	×
- Modbus S	ettings	7	8	00-01-12_RED	1	0	QV	×
Input Reg	ister	9	10	00-01-12_RED	1	0	Battery Life	×
 Topology Vie Iditional Funct 	w tions	11	11	00-01-12_RED	1	0	Extended Device Status	×
asurement		12	34					
		35	36	00-01-0A_GREEN	4	0	PV	\mathbf{X}
		37	38	00-01-0A_GREEN	4	0	SV	×
		39	40	00-01-0A_GREEN	4	0	TV	\mathbf{X}
		41	42	00-01-0A_GREEN	4	0	av	\mathbf{X}
		43	44	00-01-0A_GREEN	4	0	Battery Life	\mathbf{X}
		45	45	00-01-0A_GREEN	4	0	Extended Device Status	\mathbf{X}
		46	47	00-01-0D_YELLOW	5	0	PV	×
		48	49	00-01-0D_YELLOW	5	0	sv	×
		50	51	00-01-0D_YELLOW	5	0	TV	×
		52	53	00-01-0D_YELLOW	5	0	QV	××
		R	egister	info				

Fig. 7: Modbus mapping

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- Repeat steps 4. to 6. for all devices and values which shall be accessible. Additional map for all used devices "Device Status & Extended Device Status".
- 8. To write the current mapping table to the WirelessHART gateway using the web interface, click "**Apply**". To view the active mapping table click "**Refresh**".
- 9. Note all mappings and the IP-address in the table in chapter "Mapped Modbus Input Register" on page 17.

1.2 Emerson Process Management 1420 Smart Wireless Gateway 1.2.1 Log In

To get access to the desired data these must be available:

IP-Address:	Default Value 192.168.1.10	Notes
User name:	admin	
Password:	default	

1.2.2 Modbus Setup

Modbus Com	nunication	🌻 🕲 🛛 🔮 admin
One Modbu:	Address	2
O Multiple Mo	ibus Addresses	
Modbus TCP P	ort	502
Baud Rate		19200 🗸
ures Parity		O None O Even O Odd
MICs Stop Bits		●1 ○2
Response dela	y time (ms)	5
Unmapped reg	jister read response?	Zero fill Illegal data addr
Unmapped ree	jister write response?	OK Illegal data addr
ta Election estat	and the second se	
Floating point	floating point format?	Ves No
ose swapped	loading point formati	O Tes O NO
Incorporate v	alue's associated	
status as erro	r?	• Yes O No
Value reporte	d for error (floating point)	NaN O + Inf O - Inf O Other 0
otocol Value reporte	d for error (rounded and native integer)	32767
Scaled floatin	a point maximum integer value	65534
Use global sca	le gain and offset?	Yes No
Kup Global scale g	ain	1.0
Global scale o	ffset	0.0
05		
Submit		
,		
ny		
unication		
/Export		

Fig. 8: Modbus Setup

Configure the Modbus settings as follows:

Parameter	Selection
One Modbus Address	2
Modbus TCP Port	502
Baud Rate	9600
Parity	odd
Stop Bits	1
Response delay time (ms)	5
Unmapped register read response?	Illegal data address
Unmapped register write response?	Illegal data address
Floating point representation	Float
Use swapped floating point format?	No
Incorporate value's associated status as error?	Yes
Value reported for error (floating point)	NaN
Value reported for error (rounded and native integer)	32767
Scaled floating point maximum integer value	65534
Use global scale gain and offset?	Yes
Global scale gain	1.0
Global scale offset	0.0

Wireless HART

1.2.3 Modbus Mapping

1. Identity the desired device in the gateway and make sure it is operational.

WirelessHART											
	Network Devic	e Status								@	🖀 admin
₩ 172.16.2.25	HART Tag	Node state	Active neighbors	Neighbors	Service denied	Reliability	Missed updates	Path stability	RSSI	Joins	Join Time
	00-01-12_RED		WiTemp 3100011	1	•	100.0 %	0			2	03/15/16 15:47:45
Overview	HARV 102	•	hg1420 WiTemp 3100011	2	•	100.0 %	1	100.0 %	-23 db	1	01/11/16 07:53:54
Join failures	WiTemp 3100011	•	hg1420 HARV 102 00-01-12 RED	3	•	99.9 %	380	100.0 %	-23 db	4	01/26/16 12:27:07
Monitor											

Fig. 9: Identity the desired device

Ensure the device is bursting the expected values. Wait at least three update cycles to ensure the number of updates. The 2. available variables can be found in the "Explorer", see Fig. 11.



Fig. 10: Ensure the device is bursting the expected values



Fig. 11: Explorer - HART-Variables

3. Map the Input Register. Click on "**New entry**" and enter an odd starting register which has at least one free input registers following. Start with an offset of "**40000**" for the first register. Click on the menu of "**Point Name**" and select the desired device and variable. The "**Point Name**" is a two-part name for the data point. The first part is the HART Tag of the wireless field device which is producing the data. The second part is the parameter of the wireless field device.



- 4. Repeat step 3. for all devices and values which shall be accessible.
- 5. Click on "Submit" and wait until the operation is the gateway is finished. Now refresh the web page to see the result of the mapping.





6. Note all mappings and the IP-address in the table in chapter "Mapped Modbus Input Register" on page 17.

İ NOTICE

After changing the Modbus mapping in the Emerson Process Management 1420 Smart Wireless Gateway a recorder reading its register may need a power cycle to implement the new mapping.

2 SM500F

2.1 Connection

The Ethernet module fitted to the recorder contains an embedded web server enabling the recorder's data and status to be viewed remotely using an internet browser on a PC. The web server supports up to eight independent connections. Use a crossover Ethernet cable for the connection.

2.2 Initial Setup



2.2.1 Configuration Level Access - New Configuration

Fig. 14:

- 1. To configure the recorder, press the "Menu Key" and select "Configuration" and "Operator 1" respective the operator which shall be used.
- 2. If no password is configured just select "**OK**", otherwise enter the password.
- 3. Select "New Configuration" and press the "Enter Key".

2.2.2 Common Configuration



Fig. 15: Common configuration

- 1. Open the menu via the "Menu Key" and select "Common Configuration".
- 2. Configure the number of process groups desired (A). Each process group can have up to 6 recording channels assigned to it.
- 3. Enter the instrument tag (B) to be used to identify the recorder on configuration and audit log files. When reviewing data, the instrument tag is used to identify the source of the data, therefore it is important to ensure that the instrument tag is unique to each recorder.

2.2.3 Process Group Configuration



Fig. 16: Process Group Configuration

- 1. Open the menu via the "Menu Key" and select "Group 1" resp. "Group 2".
- 2. Enter the process group tag (A) (maximum 20 characters) that appears in the title bar when any operator views from that group are displayed. Each process group tag must be unique.



Fig. 17: Configuring the Chart view, the Indicator view and archiving

- 3. Switch to the tab "Chart" (A) and configure the following parameters:
 - Select "Horizontal -->" (chart runs left to right with scale bar on left), "Horizontal <--" (chart runs right to left with scale bar on right) or "Vertical" chart view.
 - Set "Screen interval" to the amount of historical data to be displayed on the screen. Available selections are limited by the sample rate selected.
- 4. Switch to the tab "Indicator" (B) and configure the following parameters:
 - Set "Indicator" to "On" to enable the operator to display the Indicator view.
 - Set "Bar graph display" to "On" to add the bar graph display to the Indicator view.
- 5. Switch to the tab "**Archive**" (C) and select the archive file format required. The selected archive file format is applied automatically to both process groups.
 - Text format archived data is stored in a comma separated value (*.csv).
 - Binary format archived data is stored in a secure binary encoded format.

The files can be read on a PC using ABB's DataManager data analysis software.

2.2.4 I/O Modules



Fig. 18: Setup I/O modules

- 1. Open the menu via the "Menu Key" and select "I/O Modules".
- 2. Switch to the tab "F:Ethernet".
- 3. Enter the IP-address (A) assigned to the recorder. The IP address is used by the TCP/IP protocol to distinguish between different devices. Select a not used IP-address in the IP-range of the gateway. If the default IP-address of the gateway is used select "192.168.1.5".
- 4. Enter the subnet mask (B) assigned to the recorder. The subnet mask is used to indicate which part of the IP address is for the network ID and which is for the host ID. If the default IP-address of the gateway is used select 255.255.255.0.
- 5. Enter the IP address ⓒ for the default gateway (router, switch etc.) required to communicate with other networks. This setting may not be required. The default setting is 0.0.0.0.

İ NOTICE

Changes to the IP address, subnet mask and default gateway are implemented only after the recorder has been power cycled. See also chapter "Exiting Configuration Mode" on page 13.

2.2.5 Modbus TCP configuration



Fig. 19: Modbus TCP configuration

- 1. Open the menu via the "Menu Key" and select "Modbus TCP".
- 2. Set "Implementation" (A) to "Modbus TCP Client". The recorder acts as a Modbus Master.
- 3. Set "Connections Allowed" (B) to "1". This is the number of maximum simultaneous TCP/IP connections.
- 4. Set "Modbus TCP Port" (c) to "502". This is the TCP/IP port used by the Modbus TCP network, default port is 502.



2.2.6 Exiting Configuration Mode

Fig. 20: Exiting Configuration Mode

- 1. Open the menu (1), select "Exit" and press the "Enter Key".
- 2. Select "Save as Current Configuration" (2).
- 3. Save the configuration in the internal storage (3).
- 4. Wait until the "Please Wait" message disappears then power down and restart the recorder.

2.3 Modbus Mapping

2.3.1 Configuration Level Access – Edit current configuration

Operator 1		
Edit Current Configuration	₫ •	••
Open a Configuration		
New Configuration	_	
Cancel	×	
Disable recording in configuration		
Load security configuration from file Retain security configuration in instru	iment	
	M1116	6

Fig. 21: SM500F - Configuration level

To configure the recorder, press the "Menu Key" and select "Configuration" and "Operator 1" resp. the operator which shall be used. Select "Edit Current Configuration" and press the "Enter Key".

2.3.2 Comms Analog Input Value

1. Open the menu via the "Menu Key" and select "Modbus TCP".



Fig. 22: SM500F - Menu "Comms analog I/P"

- 2. Select the input (A) "**Comms analog input**" to hold the data from the nominated slave device. (The nominated slave device is the WirelessHART gateway).
- 3. Select the communications protocol (B) "TCP" (Modbus Transmission Control Protocol).
- 4. Enter the "IP address" (C) which is assigned to the WirelessHART gateway, "Log In" on page 3 or "Log In" on page 7.
- 5. Enter the register number (D) to be read out from the WirelessHART gateway. See examples "Example for Pepperl + Fuchs WHA WirelessHART Gateway" on page 15 and "Example for Emerson Process Management 1420 Smart Wireless Gateway" on page 15.
- 6. Select the register type (E) to be read from the WirelessHART gateway:
 - For use with Pepperl + Fuchs WHA WirelessHART Gateway select "Type": "Input Register".
 - For use with Emerson Process Management 1420 Smart Wireless Gateway select "Type": Holding Register".
- 7. Select the format (F) of the data to be read from the WirelessHART gateway.
 - For use with Pepperl + Fuchs WHA WirelessHART Gateway select "Format": "IEEE".
 - For use with Emerson Process Management 1420 Smart Wireless Gateway select "Format": "Rev. IEEE".
- 8. Note the mapping in the table in chapter "Mapped Modbus Input Register" on page 17.
- 9. Repeat steps 1. to 8. for all devices and values which shall be accessible.

Example for Pepperl + Fuchs WHA WirelessHART Gateway

- 1. Take a look into mappings in the table in chapter "Mapped Modbus Input Register" on page 17.
- Calculate the correct register number as follows: "SM500F Register number" = "Start register – 1".
- 3. Enter the calculated register number in the SM500F (see Fig. 22, Pos. (D)).

For example:

- Start register is: 1
- Enter register number: 0

Example for older Pepperl + Fuchs device revisions



Fig. 23: Example with address offset "30000" for older device revisions

İ NOTICE

Older gateway revisions may show the Modbus addresses with an offset of "30000"!

- 1. Take a look into mappings in the table in chapter "Mapped Modbus Input Register" on page 17.
- Calculate the correct register number as follows: "SM500F Register number" = "Start register – 30000 – 1".
- 3. Enter the calculated register number in the SM500F (see Fig. 22, Pos. (D)).
 - For example:
 - Start register of "HARV_129 PV": 30015
 - Enter Register Number: 14

Example for Emerson Process Management 1420 Smart Wireless Gateway

- 1. Take a look into mappings in the table in chapter "Mapped Modbus Input Register" on page 17.
- 2. Calculate the correct register number as follows:
 - "SM500F Register number" = "Start register 40000 1".
- 3. Enter the calculated register number in the SM500F (see Fig. 22, Pos. \bigcirc).

For example:

- Start register of "HARV_102 -PV": 40001
- Enter Register Number: 0

2.4 Channel Configuration

Common	Process Group 1, Channels 1.1.to 1.6		
Group 1 Channels 1.1 - 1.6 ▶		Process Group 1	11/04/11 17% 15:39:32
Group 2 Channels 2.1 - 2.6 > Functions I/O Modules Modbus TCP Commissioning	1.2 1.4 1.4 1.5 1.6 ↓	Channel 1.1	Channel 1.4
Logic editor	Setup Source ID None 2	Channel 1.2	Channel 1.5
	Source ID Digital I/P A1	Channel 1.3	Channel 1.6
			M11171

Fig. 24: Recording Channel Configuration

- Open the menu via the "Menu Key" and select "Channels 1.1 1.6" resp. "Channels 2.1 2.6". The channels are sorted first by column, then by row.
- 2. Define which value shall be shown in which channel and note this in the table in chapter "Mapped Modbus Input Register" on page 17.
- 3. Select the channel to assign.

A		₽°Channel 1.1				
	Setup	Analog I/P A1 Alarm A B C D>				
		Source ID Comms analog I/P				
	(B) Setup					
Source ID Comms AIN 1						

C	Engineering range 1.0 - 5.0 metres	
Engir	neering range	
D	Low 1.0	2
	High 5.0	
	Units metres	- 2
E		
	Tag Level 1	
L		M11173

Fig. 25: Channel configuration

- 4. Select the signal source "Comms analog I/P" (A) for the selected channel. Choose "Comms AIN 1" to "Comms AIN 12" (B) as noted in in the table "Mapped Modbus Input Register" on page 17.
- 5. Switch to the tab "**Comms AIN**" and specify the display range (C) and units of the engineering value (D) corresponding to the electrical high and low values. Define the position after decimal point by entering the low value with the desired number. Select the unit to be shown.
- Enter the tag name (E) to be displayed in the Chart and Indicator Views and used to identify the channel in archive files (20 characters maximum). Tags with a high percentage of capital letters and wide characters such as 'W' or 'M' may appear truncated in some Operator views. In such cases, use lower case letters or fewer characters.
- 7. Repeat steps 3. to 6. for all devices and values which shall be accessible.

2.5 Comms analog input failure

For each "Comms analog input" an "Analog Input Failure" is selectable. These "Comms AIN Fail" can be selected for each used "Comms AIN" and might be mapped as described in chapter "Mapped Modbus Input Register" on page 17. The "Comms AIN Fail" will be set to "1" for failures on the mapped device variable and all device malfunctions.

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3 Mapped Modbus Input Register

Gateway:

y: D Pepperl + Fuchs WHA WirelessHART Gateway

□ Emerson Process Management 1420 Smart Wireless Gateway

IP-address: ____ . ___ . ___ . ___ . ___ . ___ . ___ . ___ . ___ . ___ . ___ . ___ .

Long Tag	Start-reg.	End-reg.	Value name	Unit	Comms AIN	Group & Channel
Example line: 00-01-12_RED	1	2	PV	°C	1	1.1

4 ABB WirelessHART default network parameter

	Default		Notes
Network ID:	2747 0xABB	decimal hexadecimal	
JoinKey1):	0x 5749524	15	
	0x 4c45535	53	
	0x 4649454	łc	
1) 0X = hexadecimal	0x 444b455	59	

5 Device Revisions

Pepperl + Fuchs WHA WirelessHART Gateway			
Device	WHA-GW-F2D2-0-AB-Z2-ETH		
Device Revision	2		
Website version	1.0.0.17		
Device type	V224		
Build	2012-11-20		

Emerson Process Management 1420 Smart Wireless Gateway			
Device	1420A2A3A4		
Device Revision	01420-1509-3401 Rev. AB		
SW Rev.	3.9.9		

Field mountable videographic recorder SM500F			
Туре	SM501FC/B0E0020E/STD		
System version	SM500 1002.02.033		
Software Version	SM500 2001.04.035		

6 Revision history

Rev.	Description of Version/Changes	Primary Author(s)	Date
А	Draft Version	Hendrik Deckert	2016-03-15
В	Ch. 2.3 Emerson Process Management 1420 Smart Wireless Gateway	Hendrik Deckert	2016-03-16
	added		

Notes

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