# TACC HART Over PROFIBUS User Manual

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### User Guide HART Over PROFIBUS

Emerson Process Management and Softing Industrial Automation GmbH (Softing) have collaborated to develop the HART Over PROFIBUS application for use with AMS Device Manager. If you have any questions about the operation of the HART Over PROFIBUS application, please contact the Emerson Global Service Center at:

E-Mail: ap-sms@ap.emersonprocess.com

Internet: http://www.emersonprocess.com/systems/support

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## 1.0 About this User Manual

Please read this User Manual before you work with HART Over PROFIBUS. It will help you with the configuration of master systems and will be useful for a better understanding of this application.

## 2.0 HART Over PROFIBUS

The HART Over PROFIBUS solution allows central access via Ethernet to all HART devices connected to the PROFIBUS by supported Remote I/O (RIO) with HART functionality. The HART devices are configured with the AMS Suite: Intelligent Device Manager program. For communication via PROFIBUS, a class 2 master is required which is configured with the Hardware Configuration tool. Detailed information on this can be found in the following sections.

## 3.0 Hardware Configuration Tool

With the Hardware Configuration tool, you can configure PROFIBUS DP master systems which are required for communication via PROFIBUS.

Softing PROFIBUS Interface, TH LINK PROFIBUS, xEPI 2, xEPI and Turck PB-XEPI are supported. Configuration is done in three to four steps:

- a) Search/add the PROFIBUS DP master
- b) Assign the master to a gateway
- c) Parameterize/activate the PROFIBUS DP master
- d) Create redundancy pair (only for redundant systems supported hardware see Release Notes)

Note: Gateways are groups of masters of identical device types. TH LINK PROFIBUS, xEPI 2, xEPI and PB-XEPI units are assigned to gateways of 1 to 12 devices each.

Use of the user interface and configuration of the PROFIBUS DP master will be explained in the following sections.

### 3.1 Step-by-Step Guide to Master Configuration

### 3.1.1 Start of the Hardware Configuration Tool

Select Softing | Hardware Configuration as shown in Figure 1.

Apps	by name 🗸	
	W	
Photos	🔆 Weather	Internet Information Services (IIS
Pictures	Vindows Media Player	Softing
		Hardware Configuration NEW
Reader		Installation Guide - TACC
Reading List		Release Note
		User Guide - TACC

Figure 1. Start Menu

### 3.1.2 Hardware Selection

The Hardware Configuration window displays all previously configured hardware. Click the **Hardware** button for hardware addition and modification.

Hardware Configuration Tool	×
Configured Hardware	Parameters
Gateway Name IP Address Device   Line Name Red Pat Activated	Station       Activated       Address       Baud Rate       Line Name       Bus Parameters       Polile       Image: State in the sta
en ino	Hardware Close

Figure 2. Hardware Configuration Tool

The Add New Hardware window opens.

			Add New Hard	ware	
nfigured Ha	rdware				
Gatew	vav Nar	ne	IP Address	Device	 
🕹 All					
			-1		
	d Modi	tu Hemove			
Aut	d Modi	ty Hemove			
configured l	d Modr	tyHemove			
configured H	d Modr	IP Address	Device		
configured H	d Modr	IP Address	Device		
configured   Name	d Modi	IP Address	Device		
configured I	d <u>Modr</u>	IP Address	Device		 
configured I	d <u>Modi</u>	IP Address	Device		 
configured I	d Mod	IP Address	Device		 
configured I	d Mod	IP Address	Device		 
configured I Name	d Mod	IP Address	Device		 
Name	d Mod	IP Address	Device		 
Add	d Mod	n Remove	Device		
Add	d Mod	n Remove	Device		

Figure 3. Add New Hardware

The **Configured Hardware** area of the **Add New Hardware** window shows the gateways with configured masters. In the **Unconfigured Hardware** area, new masters can be searched for automatically or added manually.

If you want to identify the hardware automatically, click **Scan**. Existing masters are searched for and listed in the **Unconfigured Hardware** area. This process can run for some time.

If you want to add hardware manually, click **Add** in the **Unconfigured Hardware** area. This opens a window where you can select the hardware. For TH LINK PROFIBUS, xEPI 2, xEPI or PB-XEPI you need to select TH LINK PROFIBUS/xEPI 2. These units require entering host name or IP address. Softing PROFIBUS Interface units require entering the Symbolic Node Name.

Add Hardware manually						
Hardware Selection     TH LINK PROFIBUS / xEPL2     Softing PROFIBUS Interface	Host Name     IP Address     Symbolic Node Name:					
	Add Cancel					

Figure 4. Add Hardware manually

After adding the hardware, the **Add New Hardware** window is displayed again. All Softing PROFIBUS Interfaces and TH LINK PROFIBUS/xEPI 2 units are listed in the **Unconfigured Hardware** area. They need to be assigned manually to a gateway.

Click Add in the Configured Hardware area to open the Add Gateway window.

			Add Gateway				
Gateway	Assigned			7 [	Unassigned		
Gateway 1	Host Name	IP Address	Device		Host Name	IP Address	Device
Device Illustration	thvepi2 000198 thilmk_000320 thilmk_000322 thilmk_001630 thilmk_002500	10.13.10.113 10.13.10.120 10.13.10.123 10.13.10.124 10.13.10.135	TH LINK PROFIBUS / xEPI 2 TH LINK PROFIBUS / xEPI 2	> < < <	thlink_002733 thlink_000251	10.13.10.94 10.13.10.109	TH LINK PROFIBUS / xEPI 2 TH LINK PROFIBUS / xEPI 2
						ЭК	Cancel

Figure 5. Add Gateway

Define the name for the Gateway and select the respective hardware units for this gateway. To do this, highlight the respective hardware units and move them to the **Assigned** area. You can assign a maximum of 12 hardware units to one gateway.

Note: Only the same hardware unit types can add to one gateway. That means either Softing PROFIBUS Interfaces or TH LINK PROFIBUS/xEPI 2 units.

Confirm with **OK** and the gateway will be shown in the **Configured Hardware** area. Assigned masters are displayed for the selected gateway.

To change the gateway, select it and click **Modify**. Gateway name as well as the assigned masters can be modified.

To delete a gateway, select it and click **Remove**. All masters assigned to the respective gateway are moved to the **Unconfigured Hardware** area. Further details on this are included in section 6.0 Addition, Modification and Deletion of Gateways.

Accept the configuration by clicking **OK**. The configured hardware is displayed in the **Hardware Configuration** window. The newly added masters now have to be parameterized and activated.

### 3.1.3 Master Parameterization

Selecting the required master displays the current parameters. Modify these according to your requirements and confirm your changes by clicking **Apply**.

Note: Only masters with activated checkboxes are active bus stations. For deactivated masters, bus parameters are saved but the master is not active on the bus. They can be activated at a later time.

				Haldwale Col	inguration re	01		
nfigur	red Hardware							Parameters
G	ateway	Name	IP Address	Device	Line Name	Red.Part	Activated	Station
G	ateway 1	thxepi2_000198	10.13.10.113	TH LINK PROFIBUS 7 xEPI 2			Activated	Activated 🔽
I G.	ateway 1	thlink_000300	10.13.10.120	TH LINK PROFIBUS / xEPI 2			Activated	Address 3
6	ateway i ateway 1	thlink_000322	10.13.10.123	TH LINK PROFIBUS / XEPL2			Activated	Baud Bate 1.5 MBit/s
G	ateway 1	thlink_002500	10.13.10.135	TH LINK PROFIBUS / xEPI 2			Activated	
G.	ateway 2	thlink_002733	10.13.10.94	TH LINK PROFIBUS / xEPI 2			Activated	Line Name
G.	ateway 2	thlink_000251	10.13.10.109	TH LINK PROFIBUS / xEPI 2			Activated	
								Bus Parameters
								Profile
								DP 💌
								Tsl 300
								Min Tedr 11
								Max Tsdr 150
								Ttr 23735
								Tqui 0
								Tset 1
								Gap 10
								Retry limit 1
								HSA 126
								Bus Parameter Test Apply
								Redundancy Pair
								Accept

Figure 6. Hardware Configuration - Activated

You can choose between three default profiles:

DF	)	Universal (F	DL/FMS)	User De	User Defined		
Bus Parameters	<b>_</b>	Bus Parameters Profile Universal (FDL/	/FMS)	Bus Parameters Profile User Defined	•		
Tsl	300	Tsl	3000	Tsl	300		
Min Tsdr	11	Min Tsdr	150	Min Tsdr	11		
Max Tsdr	150	Max Tsdr	980	Max Tsdr	150		
Ttr	23735	Τtr	58960	Ttr	23735		
Tqui	0	Tqui	0	Tqui	0		
Tset	1	Tset	240	Tset	1		
Gap	10	Gap	50	Gap	10		
Retry limit	1	Retry limit	1	Retry limit	1		
HSA	126	HSA	126	HSA	126		
us Parameter Test	Apply	Bus Parameter Test	Apply	Bus Parameter Test	Apply		

Figure 7. Default Profiles - Activated

### User Guide HART Over PROFIBUS

### **DP Profile**

In this profile you can exclusively modify the HSA value.

### Universal Profile (FDL/FMS)

In this profile also, only the HSA value can be changed. Baud rates 45.45 kBit/s, 3 MBit/s, 6 MBit/s, and 12 MBit/s are not supported in this profile.

### **User-Defined Profile**

In this profile you can modify further bus parameters. Click the respective description field and enter your settings.

To check the entered bus parameters you can use the **Bus Parameter Test**. In case of errors the incorrect values are marked with an exclamation mark.

Info! ×	Error!
All profibus parameters are correct.	The specified address is already in use on the PROFIBUS. Please change the settings and repeat the Bus Parameters Test.
OK	ОК

Figure 8. Bus Parameter Test result

### **Attention**

We strongly recommend use of these standard profiles on all masters in the PROFIBUS network. Manual bus parameter setting requires thorough PROFIBUS knowledge.

Further information on bus parameters can be found in 9.0 Terms and Abbreviations.

Masters can be in one of the following states.

Status	Explanation
Activated	Activated status means that the master is completely configured and parameterized. This master can be used in AMS Device Manager.
Deactivated	Deactivated status means that the master is completely configured and needs to be parameterized and activated. However, this master cannot be used in AMS Device Manager.
Invalid	Invalid status means a master has been added manually by entering its host name, but the IP address cannot be identified by the host name. Masters in the Invalid state cannot be parameterized.

When all masters are parameterized, click the **Close** button to close the Hardware Configuration tool. Settings are adopted with the next start of AMS Device Manager.

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### 3.1.4 Create Redundancy Pair

This function is only available for TH LINK PROFIBUS/xEPI 2 units.

For a redundant system one TH LINK PROFIBUS/xEPI 2 unit has to be in the primary line and another TH LINK PROFIBUS/xEPI 2 unit has to be in the backup line of your PROFIBUS network. (The supported hardware for redundant systems is listed in the release notes for TH AMS Communication Components.)

Configure the TH LINK PROFIBUS/xEPI 2 units according to section 3.1.1 Start of the Hardware Configuration Tool to 3.1.3 Master Parameterization.

			Hardware Cor	nfiguration To	lool		
onfigured Hardware –							Parameters
Gateway	Name	IP Address	Device	Line Name	Bed Part	Activated	Station
Gateway 1	thxepi2 000198	10.13.10.113	TH LINK PROFIBUS / xEPI 2	1	1	Activated	Activated
Gateway 1	thlink_000300	10.13.10.120	TH LINK PROFIBUS 7 xEPI 2			Activated	Address 🗸
📮 Gateway 1	thlink_000322	10.13.10.123	TH LINK PROFIBUS / xEPI 2			Activated	
Gateway 1	thlink_001690	10.13.10.124	TH LINK PROFIBUS / xEPI 2			Activated	Baud Hate
Gateway I	think_002500	10.13.10.135	TH LINK PROFIBUS / XEPL2			Activated	Line Name
Gateway 2	thlink_002755	10.13.10.34	TH LINK PROFIBUS / xEPL2			Activated	
,-							Bus Parameters
							Profile
							Tsl
							Min Tsdr
							May Tark
							Max 1501
							Τtr
							Tavi
							Tset
							Gap
							Betry limit
							пза
							Bus Parameter Test Apply
							Redundancy Pair
							Accept
			<b>JOIC</b> (A)(9)				Hardware Close

Figure 9. Select redundancy partner

Select the two TH LINK PROFIBUS/xEPI 2 units that belong to the redundancy system. To do so, click the first TH LINK PROFIBUS/xEPI 2 unit, hold down the Ctrl key, and click the second TH LINK PROFIBUS/xEPI 2 unit. Click the **Accept** button to create a redundancy pair.

Note: It is only possible to build a redundancy pair consisting of two

TH LINK PROFIBUS/xEPI 2 units. It is possible to create a redundancy pair of two PROFIBUS masters from two different gateways, but it is not recommended.

The window **Add Line Name** opens. Enter a Line Name for both PROFIBUS masters and click **OK**.

Add Line Name
Please enter a line name for both PROFIBUS master!
81NA200
OK Cancel

Figure 10. Add Line Name

Note: The entry for the **Line Name** must be unique. If the entered Line Name already exists, the **OK** button is disabled.

Figure 11.

The first selected TH LINK PROFIBUS/xEPI 2 unit is displayed in the **Configured Hardware** list as the primary master and the second as backup.

				Hardware Cor	nfiguration To	lool		
Confi	gured Hardware —							Parameters
	Gateway	Name	IP Address	Device	Line Name	Red.Part	Activated	Station
	Gateway 1	thxepi2 000198	10.13.10.113	TH LINK PROFIBUS / xEPI 2			Activated	Activated
D	Gateway 1	thlink_000300	10.13.10.120	TH LINK PROFIBUS / xEPI 2	81NA200	primary	Activated	Address
	Gateway 1	thlink_000322	10.13.10.123	TH LINK PROFIBUS / xEPI 2			Activated	
	Gateway 1	thlink_001690	10.13.10.124	TH LINK PROFIBUS / xEPI 2	81NA200	backup	Activated	Baud Rate 🗾 🗾
	Gateway 1	thlink_002500	10.13.10.135	TH LINK PROFIBUS / xEPI 2			Activated	Line Name
2	Gateway 2	thlink_002733	10.13.10.94	TH LINK PROFIBUS / xEPI 2			Activated	
	Gateway 2	thlink_000251	10.13.10.109	TH LINK PROFIBUS 7 XEPI 2			Activated	Bus Parameters
								Profile
								Tsl
								Min Tsdr
								Max Tsdr
								Ttr
								Tqui
								Tset
								Gap
								Retry limit
								HSA
								Bus Parameter Test Apply
								- Bedundancu Pair-
								incluinduncy i di
								Accept
				coffoo				
				Jorung				Hardware Close

Figure 12. Redundancy Pair

Step 1. Open Network Configuration.

#### AMS Device Manager Network Configuration 4.0

To use HART Over PROFIBUS with AMS Device Manager, your PROFIBUS network needs to be set up in the AMS Device Manager Network Configuration. Proceed through the configuration as follows.



Figure 13. Start Network Configuration

### Step 3. Select the HART Over PROFIBUS Network type and confirm with Install.

Select Network Component T	уре	<b>—</b>
Click the type of network compo	onent you want to install	
HART Modem Multiplexer Network Wireless Network	8000 BIM N	Install
FF HSE Network Calibrator HART Over PROFIBUS		Cancel
Stahl Network	Þ	Help

Figure 15. Select Network Component Type

Step 2. Add a new network with Add.

Network Configuration	x
The following network components are installed :	
Add Densus Densus	
Add Hemove Properties.	
Close Help	

Figure 14. Network Configuration

### Step 4. Click Next to install the HART Over **PROFIBUS Network.**



Figure 16. Add HART Over PROFIBUS Wizard

Step 5. Select a name for your network. This name will be displayed in AMS Device Manager.

General	Connection
Enter a unique network name. Network: Name HART Over PROFIBUS	Connection Parameters DNS or IP Address [ocalhost Supported Devices Enable at least one of the following: IF HART FOUNDATION Fieldbus Communication Timeout []] DO000 milliseconds PROFIBUS Diagnosis Browse
< <u>B</u> ack <u>N</u> ext > Cancel Help	< <u>B</u> ack Finish Cancel Help

Figure 17. Network Name Entry

Figure 18. Connection

Step 6. Enter the name of the PC system or

"localhost" in the DNS or IP Address field and deselect FOUNDATION Fieldbus. Confirm with Finish.

With this last step, parameterization of the PROFIBUS DP masters and their integration in AMS Device Manager is completed.

## 5.0 Display in AMS Device Manager

The server component for all gateways runs on the local AMS Device Manager server with the name of the PC system or "localhost".



Figure 19. AMS Suite: Intelligent Device Manager - Device Connection View

The following list explains AMS Device Manager elements.

Element	Explanation
	Network name from AMS Device Manager Network Configuration.
= Communication Host 1	Is the computer where TH AMS Device Manager Communication Components has been installed.
Gateway 1	Shows the gateway that was created by the Set Bus Parameter program.
TH LINK/xEPI 2 - thlink_000051 - IP 10.13.10.109	Master that has been assigned to a gateway in the Hardware Configuration Tool (in this case for a TH LINK/xEPI 2). If the host name is not available, the caption only shows: TH LINK/xEPI 2 - IP 10.13.10.96. For the Softing PROFIBUS Interface the caption shows for example: Softing PROFIBUS Interface - 1 - Symbolic Name eth

## 6.0 Addition, Modification and Deletion of Gateways

### 6.1 Addition of Gateways

To add new hardware, open the Hardware Configuration tool and click **Hardware**. Search for new hardware with the Scan function or add the hardware manually. Softing PROFIBUS Interfaces and TH LINK PROFIBUS/xEPI 2 units are listed in the **Unconfigured Hardware** area. Click **Add** in the **Configured Hardware** area to include the hardware units in a new gateway. Enter a new name for the gateway and move the required hardware units from the **Unassigned** to the **Assigned** area. Confirm with **OK**. Afterwards, the new masters have to be parameterized as described in 3.1.3 Master Parameterization.

Add Gateway	×
Gateway Assigned Host Name IPAddress Device	Unassigned           Hoat Name         IP Address         Device           Hink_002733         10.13.10.49         TH LINK PROFIBUS / xEPI 2           Hink_002251         10.13.10.109         TH LINK PROFIBUS / xEPI 2           Hink_000322         10.13.10.120         TH LINK PROFIBUS / xEPI 2           Hink_000322         10.13.10.123         TH LINK PROFIBUS / xEPI 2           Hink_000322         10.13.10.123         TH LINK PROFIBUS / xEPI 2           Hink_000320         10.13.10.124         TH LINK PROFIBUS / xEPI 2           Hink_001690         10.13.10.135         TH LINK PROFIBUS / xEPI 2           Hink_002500         10.13.10.135         TH LINK PROFIBUS / xEPI 2           Hink_002500         10.13.10.135         TH LINK PROFIBUS / xEPI 2           Hink_002500         10.13.10.135         TH LINK PROFIBUS / xEPI 2           Multic_002500         10.13.10.135         TH LINK PROFIBUS / xEPI 2           Multic_002500         10.13.10.135         TH LINK PROFIBUS / xEPI 2           Multic_002500         10.13.10.135         TH LINK PROFIBUS / xEPI 2

Figure 20. Add Gateway

### 6.2 Modification of Gateways

To modify existing gateways, open the Hardware Configuration tool and click **Hardware**. Select a gateway in the **Configured Hardware** area and click **Modify**. This opens the **Modify Gateway** window. The gateway name and the used masters are displayed. You can change the gateway name for all gateway types.

You can delete masters or add new ones to a gateway if you have added new hardware with the **Scan** or **Add** functions before.

Note: If you modify a gateway by removing a master that is part of a redundancy pair, the redundancy partnership is also removed. The line name of the remaining master of the former redundancy pair still displays.

			Modify Gateway					×
Gateway Gateway Device Illustration	Assigned Host Name threepi2 000198 think_000320 think_000322 think_000590 think_002500	IP Address 10.13.10.113 10.13.10.120 10.13.10.123 10.13.10.124 10.13.10.135	Modify Gateway	~	Unassigned Host Name	IP Address	Device	×
				»		ОК	Cancel	]

Figure 21. Modify Gateway

### 6.3 Deletion of Gateways

To delete gateways, open the Hardware Configuration tool and click **Hardware**. Select a gateway in the **Configured Hardware** area and click **Remove**. The gateway is deleted in the **Configured Hardware** area, and all masters of this gateway are assigned to the **Unconfigured Hardware** area.

Note: If you remove a gateway that is assigned to a redundancy pair, the redundancy partnership is also deleted.

## 7.0 Modification and Deletion of Redundancy Pairs

### 7.1 Modify Redundancy Pairs

It is not possible to modify a redundancy pair. If you want to change a **Line Name** you must remove the redundancy and rebuild it with a new **Line Name**.

Note: The entry for the **Line Name** must be unique. If the entered Line Name already exists the **OK** button is disabled.

### 7.2 Remove Redundancy Pairs

To delete a redundancy pair you have to select both PROFIBUS masters of the redundancy pair. Click the first TH LINK PROFIBUS/xEPI 2 unit, hold down the Ctrl key, and click the second TH LINK PROFIBUS/xEPI 2 unit. Click the **Remove** button to delete the redundancy partnership.

Configured Hardware         Is Gateway       Name       IP Address       Device       Line Name       Red Part       Activated         Is Gateway       1 Weep2_001198       101310.113       TH LINK PROPIBUS / kEP1.2       Activated       Advised       Advised         Is Gateway       1 Wink_000222       101310.123       TH LINK PROPIBUS / kEP1.2       Activated       Advised       Ime Name       Ime Name <td< th=""><th></th><th></th><th></th><th>Hardware Cor</th><th>figuration To</th><th>ol</th><th></th></td<>				Hardware Cor	figuration To	ol	
Gateway       Name       IP Address       Device       Line Name       Red Pat       Activated         Gateway       1 Wher, 200398       101310113       TH LINK PROFIBUS / xEP 2       Activated       Activated         Gateway       1 Wher, 200322       101310123       TH LINK PROFIBUS / xEP 2       Activated       Activated         Gateway       1 Wher, 200322       101310123       TH LINK PROFIBUS / xEP 2       Activated       Activated         Gateway       1 Wher, 200323       101310135       TH LINK PROFIBUS / xEP 2       Activated       Baud Rate       In activated         Gateway       1 Wher, 200200       101310135       TH LINK PROFIBUS / xEP 2       Activated       In activated       In activated         Gateway       1 Wher, 200251       101310109       TH LINK PROFIBUS / xEP 2       Activated       In activated       In activated         Gateway       1 Wher, 200251       101310109       TH LINK PROFIBUS / xEP 2       Activated       In activated       In activated         Gateway       1 Wher, 200251       101310109       TH LINK PROFIBUS / xEP 2       Activated       In activated       In activated         Min Tad       In activated       In activated       In activated       In activated       In activated         Ba	Configured Hardware –						Parameters
Baseway1       theqi2,000193       101310113       TH LINK PROFIBUS / xEP12       Activated         Baseway1       think,00032       101310120       TH LINK PROFIBUS / xEP12       activated         Baseway1       think,00032       101310120       TH LINK PROFIBUS / xEP12       activated         Baseway1       think,00032       101310120       TH LINK PROFIBUS / xEP12       activated         Baseway1       think,00032       101310126       TH LINK PROFIBUS / xEP12       activated         Baseway2       think,0003251       101310135       TH LINK PROFIBUS / xEP12       activated         Baseway2       think,0003251       101310109       TH LINK PROFIBUS / xEP12       activated         Gaseway2       think,0003251       101310109       TH LINK PROFIBUS / xEP12       activated         Min Tad       max       max       max       max         Polle       max       max       max       max         Imax       max       max       max       max       max         Imax	Gateway	Name	IP Address	Device	Line Name	Red.Part Activated	Station
Betweyn       Heike, 000300       101310120       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn       Heike, 000320       101310135       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn       Heike, 000251       101310135       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn       Heike, 000251       101310135       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn       Heike, 000251       101310139       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn 2       Heike, 000251       101310109       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn 2       Heike, 000251       101310109       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn 2       Heike, 000251       101310109       TH LINK PROFIBUS / KEP1 2       Achivated         Galewayn 2       Heike, 000251       101310109       TH LINK PROFIBUS / KEP1 2       Achivated         Min Tadi       Tidu       Tidu       Tidu       Tidu         Galewayn 2       Heike, 000251       101310109       TH LINK PROFIBUS / KEP1 2       Achivated         Min Tadi       Tidu       Tidu       Tidu       Tidu       Tidu         Min Tadi       Tidu       Tidu       Tidu       Tidu       Tidu </td <td>🚺 Gateway 1</td> <td>thxepi2_000198</td> <td>10.13.10.113</td> <td>TH LINK PROFIBUS / xEPI 2</td> <td></td> <td>Activated</td> <td>Activated</td>	🚺 Gateway 1	thxepi2_000198	10.13.10.113	TH LINK PROFIBUS / xEPI 2		Activated	Activated
Getway1       think_000322       101310.123       TH LINK PROFIBUS / kEP1 2       Activated         Getway1       think_002500       101310.135       TH LINK PROFIBUS / kEP1 2       Activated         Getway2       think_00273       101310.135       TH LINK PROFIBUS / kEP1 2       Activated         Getway2       think_00251       10.1310.109       TH LINK PROFIBUS / kEP1 2       Activated         Getway2       think_00251       10.1310.109       TH LINK PROFIBUS / kEP1 2       Activated         Getway2       think_00251       10.1310.109       TH LINK PROFIBUS / kEP1 2       Activated         Getway2       think_000251       10.1310.109       TH LINK PROFIBUS / kEP1 2       Activated         Mint Tad       Th LINK PROFIBUS / kEP1 2       Activated       Bus Parameters         Profile       Tal       Tal       Tal         Mint Tad       Tal       Tal       Tal         Bate Tal       Tal	🚺 Gateway 1	thlink_000300	10.13.10.120	TH LINK PROFIBUS 7 xEPI 2	81NA200	primary Activated	Address
Gateway       United 001500       1013101/24       IFLUM HPOPRIDUS / xEP1 2       Activated         Gateway 2       United 00251       1013101/9       TH LINK PPOPRIDUS / xEP1 2       Activated         Bateway 2       United 00251       1013101/9       TH LINK PPOPRIDUS / xEP1 2       Activated         Bus Parameters       Profile       Image: Stateway 2       Image: Stateway 2       Image: Stateway 2         Image: Stateway 2       United 00251       1013101/9       TH LINK PPOPRIDUS / xEP1 2       Activated         Bus Parameters       Image: Stateway 2       Image: Stateway 2       Image: Stateway 2       Image: Stateway 2         Image: Stateway 2       United 00251       1013101/9       TH LINK PPOPRIDUS / xEP1 2       Activated         Min Tad       Image: Stateway 2       Image: Stateway 2       Image: Stateway 2       Image: Stateway 2         Image: Stateway 2       United 00251       In13101/9       TH LINK PPOPRIDUS / xEP1 2       Activated         Image: Stateway 2         Image: Stateway 2       Image: Stateway 2       Image: Stateway 2       Image: Stateway 2       Image: Stateway 2         Image: Stateway 2       Image: Stateway 2       Image: Stateway 2       Image: Stateway	Gateway 1	thlink_000322	10.13.10.123	TH LINK PROFIBUS / xEPI 2	01114-000	Activated	Paud Pate
Bateway 2       think_002733       10.13.10.94       TH LINK PROFIBUS / xEPI 2       Activated         Gateway 2       think_000251       10.13.10.109       TH LINK PROFIBUS / xEPI 2       Activated         Min Tad       Max Tad       Tt         Tat       Tat       Tat         Min Tad       Max Tad       Tt         Bateway 2       think_000251       10.13.10.109       TH LINK PROFIBUS / xEPI 2       Activated         Min Tad       Max Tad       Tt       Tat       Tat         Max Tad       Tt       Tat       Tat       Tat         Max Tad       Tt       Tat       Tat       Tat         Max Tad       Tt       Tat       Tat       Tat       Tat         Max Tad       Tt       Tat	Gateway 1	thlink_001690	10.13.10.124	TH LINK PROFIBUS 7 XEPL2	8TNA200	Activated	Baug hate
Grateway 2       think_000251       10.13.10.109       TH LINK PROFIBUS / xEPI 2       Activated         Bus Parameters       Profile         Tal       Min Tada         Max Tad       Ttr         Tat       Gap         Returnet       Gap         Returnet       Test         Gap       Returnet         Bus Parameters       Profile	Gateway 2	thlink 002733	10.13.10.94	TH LINK PROFIBUS / xEPI 2		Activated	Line Name
But Parameter Test Parameter Test But Parameter Test But Parameter Test Apply Redundancy Pair Remove	🚺 Gateway 2	thlink_000251	10.13.10.109	TH LINK PROFIBUS / xEPI 2		Activated	
Polle Tal Min Tad Min Tad Max Tad Tu Tqui Tqui Tset Gap Rety linit HSA Bus Parameter Test Apply Redundancy Par Remove							Bus Parameters
Tal         Tal         Min Tadr         Max Tadr         Ttv         Tqui         Teet         Gap         Retry limit         HSA         Bus Parameter Test         Apply         Redundancy Pair         Remove							Profile
Tal         Min Tadr         Max Tadr         Tu         Tqui         Tset         Gap         Retry limit         HSA         Bus Parameter Test         Apply         Redundancy Pair         Remove							<b>_</b>
Tal         Min Tad         Max Tad         Tu         Tqui         Taet         Gap         Retry limit         HSA         Bus Parameter Test         Apply         Redundancy Pair         Remove							
Min Tad Max Tad Tu Tqui Taet Gap Rety limit HSA Bus Parameter Test Apply Redundancy Pair Remove							Tsl
Max Tadi Tu Tqui Tqui Tset Gap Rety limit HSA Bus Parameter Test Apply Redundancy Pair Remove							Min Tsdr
Max Har       Tu       Tqui       Tset       Gap       Retry limit       HSA       Bus Parameter Test       Apply       Redundancy Pair       Remove							
Tr     Tqui       Tqui     Tset       Gap     Retry limit       HSA							Max Isdr
Tqui       Teet       Gap       Rety limit       HSA       Bus Parameter Test       Apply							Ти
Teet       Gap       Retry limit       HSA       Bus Parameter Test       Apply       Redundancy Pair       Remove							Tqui
Gap Retry limit HSA Bus Parameter Test Apply Redundancy Pai Remove							Tset
Retry limit HSA Bus Parameter Test Apply Redundancy Pai Remove							Gap
HSA Bus Parameter Test Apply Redundancy Par Remove							Retry limit
Redundancy Pair							
Bus Parameter Test     Apply       Redundancy Pair     Remove							H5A
Redundancy Pair							Bus Parameter Test Apply
Remove							- Podundarou Priz
Remove							incoartidately Fail
							Remove
				office			

Figure 22. Remove Redundancy Pair

## 8.0 FAQ

Question	Answer
Why is the <b>Configured Hardware</b> window empty after starting the Hardware Configuration tool? All bus parameter fields are gray.	No hardware has been configured. Click <b>Hardware</b> and add the new hardware (see 3.1.2 Hardware Selection). Bus parameters are only displayed when a master has been selected.
Why is there no hardware in the <b>Unconfigured Hardware</b> area after scanning?	No hardware units are available in the network, or they cannot be identified automatically. Hardware units can only be located automatically if the search process is not blocked by firewall settings or similar security settings. If the hardware units cannot be searched automatically, they have to be inserted by manual addition and IP address entry.
How many hardware units can I assign to one gateway?	Up to 12 hardware units can be assigned to one gateway.
Why are no masters listed in the <b>Unconfigured Hardware</b> area after starting the Hardware Configuration tool?	Only configured masters are saved when terminating the program. Unconfigured hardware is no longer displayed after program restart. It has to be added again.
Why is a master listed as <b>Invalid</b> after manually adding the TH LINK PROFIBUS/xEPI 2 unit via host name?	The <b>Invalid</b> status is assigned to a master if it has been added manually by entering its host name, but the IP address cannot be identified by the host name. This could be caused by the fact that there is no active DNS server, or if the TH LINK PROFIBUS/xEPI 2 with statically set IP address has not been logged on at the DNS server. In this case you need to add your TH LINK PROFIBUS/xEPI 2 via IP address.
Why does AMS Device Manager show an empty network after a <b>Rebuild Hierarchy</b> ?	Ensure that your master has been parameterized and activated correctly depending on the cyclic master. If not, it will not be registered in the PROFIBUS network, or PROFIBUS failures might occur.
Why does AMS Device Manager show a gateway without segments?	In the Hardware Configuration tool there is a gateway configured, but all assigned masters are deactivated or invalid.
Why does the start-up of AMS Device Manager take so long?	HART Over PROFIBUS is designed with a 17-second time-out to build up the connection to the hardware units. If one of these units cannot be reached via TCP/IP, this time-out situation occurs. Please ensure that all inaccessible units are deactivated in the Hardware Configuration tool.

Question	Answer
Why does the hierarchy in AMS Device Manager not show a special Remote I/O?	This can happen if there is no class 1 master in the PROFIBUS network of the missing Remote I/O. In this case, it is possible to increase the time before HART Over PROFIBUS begins to communicate with the devices. During this additional time, the Remote I/O has the chance to connect to the PROFIBUS network. In the AMSTHInterface folder of the installation directory, you can access the AMSTHInterface.ini file. Open this file and search for WaitAfterMasterStart and assign the time in seconds that should elapse before communication (default value = 0), e.g., "WaitAfterMasterStart = 5" the wait time is five seconds.
Why are process values highlighted in black in the AMS Device Manager process windows?	<ol> <li>The HART device is not accessible. Please check physical connections to the HART device.</li> <li>Some devices are not capable of responding to several HART requests concurrently. HART requests are processed consecutively which requires more time. Increase the <b>Communication Timeout</b> in AMS Device Manager Network Configuration (see Figure 16). A time-out period of 30000 milliseconds per open process window is recommended.</li> </ol>

## 9.0 Terms and Abbreviations

### 9.1 Terms

Term	Abbreviation
Tsl	Slot Time – This time determines the maximum time the sender waits for a response from the addressed station.
Min Tsdr	Min Station Delay Responder – The time that the slave must wait before it may respond to a request from the master. In the standard 11 Tbit is defined.
Max Tsdr	Max Station Delay Responder – The time in which the slave must respond to are request from the master of the latest. The value range is between 60 and 800 Tbit here depending on transfer rate.
Ttr	Target Rotation Time – This time is the maximum time available for one Token rotation. In this time span, all DP masters receive the Token once.
Tqui	Quiet Time for Modulator – This is the time a station needs for switching from sending to receiving after telegram end.
Tset	Setup Time – This is the time that may pass between receiving a data telegram and the respective reaction within a station.
Gap	GAP Update Factor – Specifies after how many bus rotations the master searches for new active stations in order to include them in the bus and be able to pass the token on to that station. The GAP area is between the own station address and the next one (exception: the area of the highest station address up to address 127 does not belong to the GAP area).
Retry limit	Maximum Number of Call Retries – Determines the maximum number of telegram retries carried out to reach a station.
HSA	Highest Station Address – States the highest valid station address in the PROFIBUS network.

### 9.2 Abbreviations

Term	Explanation
DP	Decentralized Periphery
FDL	Fieldbus Data Link
FMS	Fieldbus Message Specification FMS can be operated together with DP.
DNS	Domain Name Service