

Automation

Industrial

# Operating Instructions for the *excom*<sup>®</sup> DTM

### Installation

#### Unpack the DTM.

#### □ Start the Setup program.

The *excom*<sup>®</sup> DTM has a modular design and so each *excom*<sup>®</sup> module is assigned a separate DTM. **"Complete"** should therefore be selected during the installation in order to later access all modules.

#### Enter a PROFIBUS address required for *excom*<sup>®</sup> between 0 and 126.

The installation is always carried out in demo mode. The PROFIBUS address (0...126) is fixed in demo mode and cannot be changed for later project configurations. The fixed address can only be changed as required once licensing is completed (carried out later in the frame application).

### **Creating a project**

The following procedure illustrates how to access *excom*<sup>®</sup> with the help of the DTM technology in the PACT*ware*<sup>™</sup> frame application.

### Start the PACT ware<sup>™</sup> frame application (Fig. 1).

In this application the device catalogue may have to be updated in order to accept newly installed DTMs. An empty project window appears in which the host PC represents the hardware platform of the PACT*ware*<sup>™</sup> application (see Fig. 1).

### □ Add the communication DTM

to the current project (Fig. 2). Position the DTMs required for the network structure in this empty project. In this example, the CP5511 communication processor from Siemens is used to access PROFIBUS. The communication DTM required for this is supplied by Trebing+Himstedt. Select the communication DTM with the mouse and drag it onto the higherlevel element in the project window (in this case the host PC) using drag and drop (see Fig. 2).

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Fig. 2 Adding the communication DTM to the current project



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**Set the bus parameters** (Fig. 3)

For fault-free communication, the bus parameters of the hardware (CP5511) used must be set on the communication DTM. Call up the Parameters menu by right-clicking the communication DTM. It must be ensured that the bus address of the CP5511 is not already in use in the PROFIBUS network. The baud rate and the transfer times used-on the Class I PROFIBUS master (master of the PLC) must also be set here. If the DP Standard profile is selected, the parameters of the bus times are automatically calculated and cannot be edited. To edit the parameters, select the profile **User-Defined**.

#### □ Add excom® (Fig. 4)

*excom*<sup>®</sup> can then be added to the communication DTM by drag and drop or via the context menu of the DTM (right-clicking the DTM in the project window). Select first of all the DTM entry **"excom DP"**, which provides access to PROFIBUS and the interface to the *excom*<sup>®</sup> modules.

#### □ Add the modules

From the list of *excom*<sup>®</sup> modules, now add the modules used with PACT*ware*<sup>™</sup> to the project. In this way, it is not necessary to configure **all** the modules of an *excom*<sup>®</sup> station. However, ensure during configuration that the selected modules match those that were also configured by the Class I master exactly. If, for example, an **"AIH40Ex 4H"** was configured in the Class I master, an **"AIH40 1H"** should not be configured in the PACT*ware*<sup>™</sup> project. **Please note:** For parameterization in the PLC the mode 2 GSD file must be used.

#### HART® communication

Analog modules of type AIH... and AOH... contain a HART<sup>®</sup> controller that opens a separate communication with the connected HART<sup>®</sup> instrumentation. The associated DTMs support this feature and offer a communication channel for it. They are therefore device and communication DTMs in one. In this way, you can configure the device DTMs of the field devices on the excom<sup>®</sup> periphery using drag and drop, and also use them for other functions. The project tree including the HART<sup>®</sup> instrumentation is shown in Fig. 5.

	Local     C EPI
EPI address	PRASKE0002
Channel	Channel 0 (CP5511 card 0)
Bus parameter	
Address	
Address Baudrate	1.5 MBit/s

Bus parameter	
Bus parameter	
Tsl	300
Min Tsdr	11
Max Tsdr	150
Τtr	23735
Tqui	0
Tset	1
Gap	10
Retry limit	1
HSA	126
ок (	Cancel

#### Fig. 3 Setting the bus parameters

Device	Vend	or		
📶 excom DP	Turcl	<		
<b>w</b> ND840	Mets	o Automation		
🞯 VEGA D90 Profibus	VEG/	A Grieshaber KG		
🮯 VEGA D91 Profibus	VEG/	A Grieshaber KG		
🞯 VEGA D94 Profibus	VEGA	EGA Grieshaber KG		
😻 VEGA D95 Profibus	VEG/	A Grieshaber KG		
😻 VEGA D96 Profibus	VEGA	A Grieshaber KG		
🞯 VEGA D97 Profibus	VEG/	A Grieshaber KG		
🐳 VEGA Service Profibus	VEGA	VEGA Grieshaber KG		
🐌 VEGABAR 40 Profibus	VEG/	A Grieshaber KG		
*****		□ <u>S</u> how all devi	ces	
===== GSD File for Profibus DP (EN 50170)	1	<u>0</u> K	<u>C</u> ancel	

Fig. 4 List of the installed PROFIBUS DTMs

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#### Using the excom® DTMs

The context menu (right-click the DTM in the project window) provides information on the functions available. Different options are possible depending on the connection status (connected/not connected). When not connected, all settings are carried out that are not directly linked with the hardware, e.g. offline parameters. The offline parameters of the *excom*<sup>®</sup> DTMs are used in PACT*ware*<sup>®</sup> for setting the DTM access of the associated module, e.g. selecting which HART<sup>®</sup> secondary variables are to be read or the direction of the channels of the DM80Ex (input/output module).

When connected, the DTM is linked directly to the hardware. There is first of all a logical connection between the DTM and the module. In this state, the DTM allows access to process data, diagnostics and device data as well as the manipulation of process data for simulation tasks.

The following figures show the basic structure and operation of all DTMs (see Fig. 6 to Fig. 10):



Fig. 5 Project tree including HART<sup>®</sup> instrumentation.

	Analog	ľ	HART	AIH40Ex: slot number
:hannel 1: Input Range	420 mA 💌	Filter	off 💌	Ine monitoring and failsafe strategy S short detection Failsafe value 3.6 mA
channel 2: Input Range	4.20 mA 💌	Filter	off	Ine monitoring and failsafe strategy in short detection failsafe value 3.6 mA
shannel 3: Input Range	420 mA 💌	Filter	off	line monitoring and failsafe strategy stort detection v open line detection failsafe value 3.6 mA v
hannel 4: Input Range	4.20 mA 💌	Filter	off 💽	line monitoring and failsafe strategy v short detection failsafe value 3.6 mA v
				Ok Cancel Apply Help

#### Fig. 6 Parameter entry

<03,-/->#1	H40EX 4H # Simula	LION						alat	number	
an channel 1:	laiog	nan i						SIUC	number	
State	Forcing activated	Process value	24.7 🗶 💌							
Forced	Force invalid	Force value	44.7	-25	0	25	50	75	100	1.
channel 2:										
State	Forcing activated	Process value	-25.0 % 💌							
ОK	Force invalid	Force value	-25.0	-25	0	25	50	75	100	12
channel 3:										
State	Forcing activated	Process value	-25.0 🗶 💌							
OK	Force invalid	Force value	-25.0	-25	0	25	50	75	100	1.
channel 4:										
State	Forcing activated	Process value	-25.0 % 💌							
OK	Force invalid	Force value	-25.0	-25	0	25	50	75	100	1.
Stop	1							Close		Help
	•								- 0	
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Fig. 7 Simulation



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<03,-/->AIH40Ex 4H I	dentifikation			
Device				
Manufacturer:		A		
Charge number:	000ACGOH - 0332		-	
Order number:	6884001		"iboz e se	6. M
Device information			27	
Description:	Analog input, active, HART	10		
Channels:	4 channels single ended			
Ranges:	0/420 mA		Alastic.	
Revision Levels				
Hardware/Software:	012246901J / 1.81			
		~	_	-
		Las	t update:	21.06.200
Reread			Close	Help
	C			TURCK

Fig. 8 Identification



Fig. 9 Diagnostics

4,<3,-/->AIH	40Ex 4H # Measured valu	ie	And the second distance of the local distance of t	_ 🗆 ×
an	alog	HART	slot number	03
State	ОК	27.0 %		
channel 2:	ПК	25.0 2	-25 0 25 50 75 100	125
			-25 0 25 50 75 100	125
State	<u>OK</u>	-25.0 %	-25 0 25 50 75 100	125
State	OK	-25.0	▼ -25 0 25 50 75 100	125
	1			
Stop				Help MICK

Fig. 10 Measured value representation

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