

Foxboro[™] DCS

Field Device Expert for PROFIBUS-DP Devices

PSS 41S-10FDMPB

Product Specification

February 2024

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Galaxy Home	View Tools Help		CS80_20231115 on FB	TS05 - AVEVA System Platform IDE
🕞 🗞 Rename	Duplicate	Instance 🖓 Screen 🔅 N	Galaxy Home View Tools Help	
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		SProfibus	SEndress_Hauser_Prosoni#Profi SEndress_Hauser_Prosoni#Profi Sendress_Hauser_Prosoni#Profi Sendress_Hauser_Prosoni#Profi	
® RI0002	Associa	te DTM Export GSD	SINVENSYS_FOXBORD_SRD991#P1_1 PO2000 [pF07200] SINVENSYS_FOXBORD_SRD991#V1_4 SINVENSYS_FOXBORD_SRD991#V1_4 SINVENSYS_FOXBORD_SRD991#V1_4	
General Bus Settings Modules Data Definition Field Device Expert			SKROHNEJFC300 Port 1 Port 2	
	RI0002*			- ×
Min Station Delay Response Time(MinTSDR)	General Bus Settings Modules Data Definition Field Device Expe	n	1 Second PA	G.? 6 ×
Watchdog	Configuration Data User Parameters			·
Enable Watchdog time base in 1 ms	Available Modules	General Bus Settings Modules Data D	La r R X	Go Online Go Offline
Timeout 3000 ms (precision: 10ms)	Name Input Output		Menu Go Orline Go Offline	[KORUNE]
Mode Support Device Failure Timeout	WAGO NETCON Dummy 0 bytes 0 bytes 750-333 No PI Channel 0 bytes 0 bytes			RUPINE
Sync Freeze Enable Timeout 0	750-333 2 Byte PI Channel 2 bytes 2 bytes 75x-400 2DI/24V DC/3.0ms 1 bytes 0 bytes		E Notes V Help	
Groups	*75x-400 2DI/24V DC/3.0ms 0 bytes 0 bytes 75x-401 2DI/24V DC/0.2ms 1 bytes 0 bytes	Identification Input Output Diagnostics Name	s Configuration Data Device Parameter (DFV1) Compare Watch Customize GSD data	Value Unit A
1 2 3 4 5 6	*75x-401 2DI/24V DC/0.2ms 0 bytes 0 bytes 75x-402 4DI/24V DC/3.0ms 1 bytes 0 bytes	Tag Address	WAGO 750-333 (PW: 09 10) PRO 2	IECOND EA
	<	Ident No Manufacturer Id	0x0754	Krohne IFC300
DPV1		Vendor Nodel	WAGO Kontakttechnik GmbH WAGO 750-333 (PW: 09 10) PRO	
Enable DPV1 Response Timeout 10000	Configured Modules(Ctg_Data(Length : 7 bytes))	Order Id Hardware Revision	0x0000 Add Link	Krohne
FailSafe	Slot No Name Input Output	Device Serial Number	File name: D:Meda/file/ba_06.8.1.html	
	☐ 2 75x-400 2DU/24V DC/3 1 bytes 0 bytes	Graphics: Edit	Alias ba_06.8.17ml	
	☐ 3 75x-435 1Dt/24V DC/E 1 bytes 0 bytes ☐ 4 75x-478 2AI/0-10V/SE 4 bytes 0 bytes	B (R wago 750-333 connections png B (R wago modules png	UK Laton	
	5 75x-530 8DO/24V DC/ 0 bytes 1 bytes			Manufacturer specific
RI0002	☐ 6 75x559 4A0/0-10 V 0 bytes 8 bytes ☐ 7 75x-460 4A1/RTD 8 bytes 0 bytes		and the second s	
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Features

Key features of the Field Device Expert for PROFIBUS-DP Devices include:

- Lifecycle coverage of the field device tasks such as configuration, commissioning, maintenance, and diagnostics are in one comprehensive tool set.
- Integration of the device configuration into the control database.
- GSD-informed editing tools for bus configuration, module selection, and I/O data definition.
- Built-in universal PROFIBUS device type manager (DTM) providing online access to device data and diagnostic messages.
- Option to run the device manufacturer's DTM within Field Device Expert for configuration and/or device maintenance.
- Device templates that enable re-use of engineering for multiple tags of the same device type.
- Convenient links to editors for the host control station and Fieldbus Module.
- Watch screens that provide data history using tables and trend displays.
- Compare screens that enable download and upload of DPV1 parameter values to align the host database with the device.
- User-configured links to documents, photos, drawings, help files and other device-related resources.
- Ability to create custom screens for viewing device data and diagnostic messages, and for downloading DPV1 device parameters.
- Access based on log-in authentication and assigned Field Device Technology (FDT) roles.
- Integration with the Control Editors' Network View and other application windows, which enable quick creation, assignment, tagging and deployment of devices.
- Available Instrument Workshop edition for calibration, testing, and/or precommissioning of devices before plant installation.

Managing PROFIBUS-DP Devices

This Field Device Expert allows Engineers and Technicians to change and maintain the configuration of PROFIBUS-DP devices from a remote location, typically the system's Engineering Workstation. There is a tremendous saving in labor and setup time as there is no scaffolding to erect and no hot pipe work. The Field Device Expert also provides the ability to troubleshoot the Field devices while the plant is in startup or in operation.

The Field Device Expert for PROFIBUS-DP Devices is a software application that adds on to the EcoStruxure[™] Foxboro DCS Control Editors to provide configuration support for PROFIBUS DP and PA devices, and integration of PROFIBUS networks into the EcoStruxure[™] Foxboro DCS system. The PROFIBUS devices are connected to the control system via the FBM222 Redundant PROFIBUS Communication Interface.

The Field Device Expert's graphical user interface opens inside the Control Editors, and provides easy-to-use bus configuration, module selection and data definition tools based on the device's General Slave Device (GSD) file. The device configuration is maintained in a Galaxy database, where it is integrated with other control system elements such as compounds, strategies and Distributed Control Interface (DCI) blocks.

Field Device Expert's built-in universal PROFIBUS DTM provides highly customizable diagnostic displays and watch screens that facilitate deployment of the device and validation of the control strategy.

Engineering Setup for PROFIBUS Instrumentation

The Field Device Expert helps to assist a plant in starting up faster during that phase of its life cycle by automating detection, configuration, commissioning, testing and reporting.

During normal operation, it helps to analyze and diagnose PROFIBUS instrumentation in a running plant.

During the maintenance phase of a plant's lifecycle, it assists with replacement of existing devices with new devices.

The benefits of the Field Device Expert are maximized by customizing the run time interaction displays that are part of the PROFIBUS device template. This document, therefore, starts from that point and walks through the PROFIBUS capability from the beginning of the lifecycle. The first step is populating Field Device Expert with PROFIBUS instrument templates for each instrument model type, each template linked to the corresponding Device Description. If the manufacturer or vendor of the instrument also makes available an EcoStruxure™ Foxboro™ DCS Field Device Tool (FDT) DTM for diagnostic analysis of the instrument, it also gets linked to the template during template creation.

This table lists the advantages of the Field Device Expert during each phase of a plant's lifecycle:

Table 1 - Advantages of the Field Device Expert During Each Phase Of A Plant'sLifecycle

Lifecycle Stage	Advantages
Startup	Create and customize PROFIBUS field devices
	Create PROFIBUS instrument instances
	Develop customizable device configuration screens
	 Device Commissioning Wizard - automates setting the instrument tags, downloading the configured parameter settings, and making certain the instrument tags and the Galaxy database are synchronized
	Run DD methods
	Synchronize the device and host databases
Normal operations	 Analyze and diagnose PROFIBUS field devices, particularly any suboptimal PROFIBUS Instrument conditions detected
Maintenance	Assists in replacement of PROFIBUS field devices

Templates and Device Inheritance

Field Device Expert is GSD-based. You can import a GSD file into a copy of a PROFIBUS device template. The GSD file, which is bound to the template, informs the choices for bus settings, module selection and user parameters for each instance of the field device type used in the plant. The template also includes controls for specifying tags for devices derived from the template.

\$SRD991 *			G ? 🖬
eneral Bus Settings Modules Data	Definition Field Device Expert		
Object Information			
Device Name:	\$SRD991		
Derived From:	\$Profibus		
Associate GSD Associat	e DTM Export GSD		
Use Module Definition from	● GSD ○ DTM		
GSD Information		۲	
Vendor Name:	INVENSYS FOXBORO ECKARDT		
Device Model Name:	SRD991		
Profibus IdentNo:	0xd991		
Device Revision:	V1.3		
GSD Revision:	3		
Hardware Revision:	3		
Software Revision:	8, 9 or 10		
Device Instances			
Mask Prefix	SRD		
Number of Digits	3 ~		
Mask Preview	SRD001		

Figure 1 - Device Template for a PA Positioner

You can also define a device type by associating the device manufacturer's DTM with the template, in which case the GSD information is extracted from the DTM and bound to the template. You can then access the device specific DTM in the Vendor DTM tab to configure and maintain the devices.

The device templates provide the ability to engineer a typical field device type once, and propagate the configuration to multiple instances of the same device type, achieving optimum reusable engineering. Individual parameter values set in the template can be locked such that they cannot be changed in the device instances, or they can remain unlocked allowing you to edit individual device configurations, overriding selections copied from the template. Changes made at the template level to locked parameters are propagated to the devices that have already been created from the template.

Creating a PROFIBUS Device

To create a PROFIBUS device in the Control Editors, you can simply drag the device template to the host FBM222 and drops the template on one of the two EcoStruxure™ Foxboro Fieldbus Module ports.



Figure 2 - Adding a PROFIBUS Device

Double-click the new device to open it in the Field Device Expert, set the device address, and then view and modify the bus settings, module selection, and other configuration choices inherited from the template.

As part of the device creation, the Control Editors set up an equipment control block (ECB201) that represents the device in the EcoStruxure[™] Foxboro[™] DCS Control Software. The Field Device Expert General tab provides a hotlink to an editor for the device ECB, where you can specify block display settings, configure parameters for collection by the Control Software History application, and set runtime access permissions.

Configuration Tools

The Field Device Expert provides tabbed pages for editing bus settings (Editing Device Bus Settings, page 7), selecting modules and user parameters (Configuring Modules in a Remote I/O Device, page 8), and defining device I/O (Parameters Configured in the Template Can be Edited at the Device Level, page 9).

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General Bus Settings Modules Data Definition Field Device Expert				
Min Station Delay Response Time(MinTSDR) 11 TBit Watchdog Enable Watchdog time base in 1 ms Timeout 3000 ms (precision: 10ms)				
Mode Support Device Failure Timeout Sync Freeze Enable Timeout s				
Groups 1 2 3 4 5 6 7 8				
DPV1 DPV1 Response Timeout 10000 ms				
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Figure 4 - Configuring Modules	s in a Remote I/O Device
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ierai	Dus Se	tungs	modules	Data	Veninition	Field Device Exp	pert					
Confi	guration	Data	User Param	neters								
	- Hable B											
AV	allable	Modules										
N	lame			li li	nput	Output	Data	Pos	sible Slots	^		
V	VAGO N	ETCON	Dummy	0	bytes	0 bytes	0x00	1 an	d 2 - 64			
7	50-333 1	No PI Cł	annel	0	bytes	0 bytes	0x00	1 an	d 2 - 64			
7	50-333 2	2 Byte P	I Channel	2	bytes	2 bytes	0xB1	1 an	d 2 - 64			
7	5x-400 2	2DI/24V	DC/3.0ms	1	bytes	0 bytes	0x10	2 - 6	4			
*	75x-400	2DI/24	DC/3.0ms	0	bytes	0 bytes	0×00	2 - 6	4			
7	5x-401 2	2DI/24V	DC/0.2ms	1	bytes	0 bytes	0x10	2-6	4			
		201/241	/ DC/0 2mm			0 bytee	0x00	2 - 6	4			
*	75x-401	201/24	DO/0.2ms		bytes	0 bytes	0.10			~		
* < Co	75x-401 5x-402 4	4DI/24V	DC/3.0ms IS(Cfg_Data	(Leng	bytes bytes th : 7 bytes	0 bytes 0 bytes	0x10	2-6	54 14	>		
* ~ Co	75x-401 5x-402 4 Infigured	4DI/24V	DC/3.0ms es(Cfg_Data	l(Leng	bytes bytes th : 7 bytes	0 bytes 0 bytes	0x10	2-6	4	>		
* 7 < Co	75x-401 75x-402 4 onfigured Slot No	4DI/24V I Module Name 750-33	DC/3.0ms DC/3.0ms s(Cfg_Data	i(Leng	bytes bytes th : 7 bytes Input 0 bytes)) Output Obvtes	Data 0x00	2-6	Add/R	> Neplace		
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	75x-401 /5x-402 4 shofigured Slot No 을 1 을 2 을 3 을 4	4DI/24V 4DI/24V 1 Module 750-33 75x-40 75x-43 75x-47	3 No PI Cha 2 2DI/24V D 5 1DI/24V D 3 2AI/0-10V	(Leng nnel)C/3)C/E //SE	th : 7 bytes th : 7 bytes Input 0 bytes 1 bytes 1 bytes 4 bytes)) Output Output Obytes Obytes Obytes Obytes	0x10 Data 0x00 0x10 0x10 0x10 0x51	2-6	Add/R	Neplace		
	75x-401 /5x-402 4 infigured Slot No 을 1 을 2 을 3 을 4 을 5	4DI/24V 4DI/24V 1 Module 750-33 75x-40 75x-43 75x-47 75x-53	20/0.2ms DC/3.0ms ss(Cfg_Data 3 No PI Cha 0 2DI/24V D 5 1DI/24V D 5 2AI/0-10V 0 8D0/24V	(Leng) (Leng) (C/3)C/3 (C/E //SE DC/	th : 7 bytes input 0 bytes 1 bytes 1 bytes 4 bytes 0 bytes))) Output Obytes Obytes Obytes Obytes Obytes Obytes Obytes Obytes	0x10 Data 0x00 0x10 0x10 0x10 0x51 0x20	2-6	Add/R Ren	Replace		
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nput Output Diagnostic Device Parameter (DP	/1)			
Input Parameters	Input Parameter Det	ails 🖓		 1
MAGO 750/333 (FW. 09 10) PRO M1 75x-400 2DI/24V DC/3.0ms - 1 Input Pai InputParameter_001	Name	Temp_NW7_3	Use For DCI Assignment	
M2 75x-435 1DI/24V DC/EEx i - 0 Input Para M3 75x-478 2AI/0-10V/SE - 0 Input Paramet	Data Type	SignedInteger16 \lor		
- M6 75x-460 4AI/RTD - 4 Input Parameter(s) Temp_NW7_1	Byte Position	4 Bit Position 0	Bit Length 16	
Temp_NW7_2 Temp_NW7_3 Temp_NW7_4	Sign Bit Position	15 Swapping Byte0_Byte1	~	
	Complement	NoComplement 🗸		
	Units	C Lower Range -32768	Upper Range 32767	
	StatusParameter	None	1	
< >>	Good Status Mask			
Add Delete Report	Description	RTD at Position 3 on NW7	$\langle \rangle$	
Input Data Structure				
- 1 - Byte				
2 - Byte 3 - Byte				
- 4 - Byte				
5 - Byte				
7 - Byte				
Create Parameter				

Figure 5 - Parameters Configured in the Template Can be Edited at the Device Level

Configuration choices, whether made at the device template level or in an individual device, are device-appropriate by default as the device configuration remains linked to the GSD for device description. Once the modules have been selected, the Data Definition tab enables the creation of input and output parameters, diagnostic messages and parameters, and if the device supports DPV1 functionality, DPV1 device parameters. Parameter definitions include starting byte and bit position, bit length, data type, optional byte-swapping, complement definition, and plain-language names and descriptions for easy identification.

The parameters can be selected for display in the various standard and user-defined screens in Field Device Expert. The parameters are also shown in the Control Editors' browsers that enable quick and accurate specification of point number syntax in the control strategy DCI blocks.

Control Configuration

PROFIBUS devices are connected to Foxboro DCS control blocks using DCI blocks. DCI block types include single and redundant input and output blocks for common data types such as integer and real. The DCI blocks are mapped to PROFIBUS data of the different PROFIBUS data types.

The Control Editors' Strategy Editor provides graphical tools for adding DCI blocks to a control strategy, linking them to control blocks, and specifying the block execution order within the strategy. You can then open a Device Browser in the editor to map the DCI blocks to the slave devices and their parameters created in the Data Definition tab.



Figure 6 - Strategy Editor Device Browser Connects DCI Blocks to Slave Device Data

Universal PROFIBUS DTM

Field Device Expert's built-in PROFIBUS DTM includes these set of standard tab pages:

 Identification tab displays information about the specific device such as the device manufacturer and type, and hardware and software versions. The tab also provides user-configured links for quick and easy access to any document or image useful in engineering or maintaining the field device. The documents images can be linked to the Identification tab in the template or a device instance.

Figure 7 - Hyperlinks to Documents and Drawings Can be Made on the Identification Tab

				□ ×
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Contract Day Contract Maddate Days De	setutes Field Device Expert			
General Bus Settings Modules Data De	finition Field Device Expert			
				1
	Menu		Go O	Go Ottline
			🥅 Notes 🔇) Help 🚺 😧
Identification Input Output Diagnostics	Configuration Data Device Pa	arameter (DPV1) Compa	are Watch Customize	
Name		GSD d	ata	
Tag	WAGO 750-333 (FW: 09	. 10) PRO		
Address	2			
Ident No	0xb754			
Manufacturer Id				
Vendor	WAGO Kontakttechnik Gm	ЬН		
Model	WAGO 750-333 (FW: 09	. 10) PRO		
Order Id	00000			
Software Revision	0x0000	Add Link		
Device Serial Number		E1 DAM	dia\filon\ha_06.9.1.html	
		File name: D. Wie	dia vies ba_00.0.1.1010	
Graphics: Edit	Delete Add	Alias: ba_06	6.8.1.html	
Comparison TEO 222 comparticute and			OK	Cancel
wago modules png				
a wayo nounceping				Sate
		1. M		voltage supply -System -Power lancer centuch
			A 🛃 🖬 📑 💳	Dateskontakte Sunnhy onlines (notional
			Pickins correction	24V 0V
			i i i i i i i i i i i i i i i i i i i	Supply roltage (field)
Links: Edit	Delete Add	C III		
WAGO 750-333 dataspect off		66	Address 2 2	ov
B RNV7 IO.chm	1			
				÷
			interface	Power jumper contacts
RI0002				=
110002				•

 Input tab and Output tab provide real-time displays of the parameters defined in the Data Definition tab (or the Vendor DTM if the parameters were configured with the device manufacturer's DTM).

RI0002								D.	2 6
eneral Bus Settings Modu	les Data Definition	Field Device Expert							
			Menu			G	o Online	Go O	ffline
			Last Update	ed: 11/22/2023 11:55:19 /	AM	Notes	Help	A	
Identification Input Output	Diagnostics Config	guration Data Watch Customize							
Name	1100 70542210	DeviceValue	StatusValue		Des	scription			
mu 12 Chan. Input:xxx: 0 Byte 001	x1198 /6543210		OK						
0 Byte 003	0		ок						
									_
		Customize Parameters for Inpu	ıt						
				Inheritance 📑					
		All - n	parameter pool			Tab Par	ameters		
		M0 10 CL 11 11 11 11 10 7	25 40010 0 D + 001		12.01	1100 705	40010.0 D :	001	
		M0_12 Chan. Input xxxx1198 // M0_12 Chan_Input xxxx1198 7/	6543210.0_Byte_001 6543210.0_Byte_003	M) 12 Chan. Inpu) 12 Chan. Inpu	it xxxx 1198 765	43210.0_Byte_ 43210.0_Byte	001	
				MU	12 Chan, inpu				
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Raw data					indata paciodi	10	• [Can]	1 - 120]	

Figure 8 - Selecting Input Parameters for Online Display in Field Device Expert

 Diagnostics tab displays diagnostic messages specified in the GSD and those which you define in the Data Definition tab based on either device diagnostics or DPV1 device parameters.

Figure 9 - Field Device Expert Displays Diagnostics Messages as well as Raw Device Diagnostic Data

						□ ×	1		
RI0002									
General Rue Settinge Modules	Data Definition Field D	evice Expert							
	boto bennition								
				Menu	Go Online	Go Offline			
				3					
				Last Updated: 11/22/2023 11:58:34 AM	Notes 🕐 Help		Raw Diago	ostic Data Stream	
Identification Input Output Diag	nostics Configuration D	ata Watch Custor	nize				By	te# Value	-
Timestamp	Name	Status	Category	Description	Action		0	00	
11/22/2023 11:58:34 AM	DP_SLAVE	1	Device	The Diagnostic information is			1	0c	
11/22/2023 11:58:34 AM	Watchdog on	1	Device	DP-Slave's watchdog control has			2	00	
11/22/2023 11:58:34 AM	Master Address	1	Device	Station address of the master			4	06	
							5	13	
							1		
							C	Binary Hex Decimal	
								Close	
								0,000	
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						53 C	1		
Haw data 🔁 Refresh	X Clear all					N Customize	1		
RI0002							1		
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• Watch tab allows you to track up to eight parameters with a data table and a trend display.

- Configuration Data tab, which is displayed only when the Field Device Expert is online to the device, compares the configuration data in the device with the data set in the Galaxy database.
- Customize tab provides tools for adding custom tabs and parameter groups, setting access permissions for Field Device Expert functions based on the user's log-in information, and setting up downloads to selected devices.

Field Device Expert also displays these tabs for devices that support DPV1 functions:

• Device Parameter (DPV1) tab displays selected device parameters in a grid format and a trend display. The tab enables upload and download of parameters that are defined as writable.

Figure 10 - The Device Parameter (DPV1) Tab Enables Downloads to DPV1 Devices and Trend Displays of Up to Eight Device Parameters



 Compare tab enables you to identify differences between DPV1 device parameter values in the Galaxy database and the values read from the device, and then reconcile the two sources by either uploading or downloading selected parameters.

The Tab Configuration dialog box, which is accessed from the Customize tab, enables addition of other tabs using one of three formats: Input/Output, Watch and Device Parameter (DPV1). Whether a tab is visible and enabled depends on the FDT roles assigned to each user and the access specified for those roles in the Set Permissions dialog box.

Device Identification Page and Device Info Templates

You can build a "home page" for each field device, shown first when the device is invoked in Field Device Expert.

Field Device Expert provides a toolset for building this Device Identification page for each field device, displaying key attributes identifying the device, and system

management parameters for the device. The details for each page are stored in a device info template, which can include items such as:

- Graphics and document links to provide configuration guidelines, troubleshooting tips and other help to users.
- Notes that will be inherited by the derived devices. An electronic notepad can be used to provide specific instructions about deploying the device, certain configuration steps, or list tests needed for deployment. For device instances, you can view notes entered at the template level and record information about the specific device.

Using a Device-Specific DTM

Field Device Expert provides the option of using a DTM supplied by the device manufacturer to configure and maintain the device. Selection of the device-specific DTM is made at the template level, at which point GSD information is extracted from the DTM and bound to the device template.

When the device DTM is associated with the device template, the manufacturer's user interface is made available for the template and derived devices in Vendor DTM tab in Field Device Expert.

Figure 11 - The Device Manufacturer's DTM is Opened in the Vendor DTM Tab for Configuring and Maintaining Devices

E IFC300_PA					⊑ ? B ×
General Bus Settings Modules Dat	ata Definition Field Device Expert Vendor DTM	1			
Config & User Parameter Compare		Menu		Go Online 0	30 Offline
Device r Descript TAG	name: IFC300 (MBP-SK2) titon: IFC300 (MBP-SK2) DTM for FDT IFC300_PA	12		KRO	HNE
▼ Start	Symbol Parameter	Status	Value	Unit	^
Physical Block	Operation Unit				
Identification 1	TAG	0	IFC300_PA		
Identification 2	Descriptor	0	Krohne IFC300		
Circuit Board Info	Message	0			
	Device				
Function Blocks	Manufacturer	0	Krohne		
Cyclic data exchange	Device ID	0			
DTM Settings	Device serial number	0			
	Software Revision	0			
	Hardware Revision	0			
	Static Revision No.	0		0	
	PROFIBUS Ident Number	0	Manufacturer specific	•	
	Installation Date	0			
	Write Locking	0	Off		
	Device Certification	0			
	Strategy	0		0	~
	٢		ок с	ancel Ap	> oply
♦ Disconnected ① Data s	set 😨	Administrator			
IFC300_PA					

You have a choice of configuring the device template and the derived device instances using the device DTM or the Control Editors configurators in other Field Device Expert tabs. Whichever tool is selected, both the vendor DTM and the universal PROFIBUS DTM are available for managing devices as they are brought online.

NOTE: Manufacturer-supplied DTMs can vary in their compliance with PROFIBUS and FDT specifications. Confirm the applicability of vendor-supplied DTMs for your project. Field Device Expert Frame Application is FDT v2.0 compliant.

Master Bus Settings

The Field Device Expert is also used to configure the master bus settings for each port in the host FBM222.

			Bue	Cattings	51-14 D								
1ardw	are	Software	DUS	settings	Field De	vice Ex	pert						
				Configur	Port	1	~ V	Jse P	ort				
	FBM	Settings											
	Mast	ter Station /	Addres	55		1							
	High	est Station	Addre	55		2							
						-		_					
	Mins	slave interv	/81			125			ms				
	Data	Control Tin	ne			1800	0		ms (pre	cision: 10m	ns)		
	FBM:	222 Bus Par	ramet	ers									
	Segn	nent Couple	er I	None		\sim							
	Baud	Rate	\$	500 kBaur	1	~	Default		/alidate	Calcula	teTTR		
							berduit		undate	Carcala			
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		·· Ctation D	D			TCDD)							
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	Set	up Time(TS	SET)				1			TBit			
	Quiet Time(TQUI) Target Rotation Time(TTR)					0			TBit				
						10000	00		TBit				
	Est	imated Sca	an Tim	e			125			ms			

Figure 12 - Setting Master Bus Parameters

When you select a baud rate for the port from a pull-down list and press the Default button, the editor supplies the appropriate values for various timing parameters such as minimum station response time, which can be edited individually as needed. With a click of the Validate button, you can verify the bus settings of the FBM and the connected PROFIBUS devices on the port using the definitions in the GSD files. The CalculateTTR button on Bus Settings tab allows you to optimize the target token rotation time for each port.

Deployment

The device configurations can be deployed to The Foxboro DCS system as part of a control database deployment, which also downloads the host FBM222 configuration and the DCI and control blocks contained in the various control strategies. The FBM222 uses the downloaded configurations to initialize the connected devices and manage cyclic and acyclic data exchange between the devices and the control station. After the initial deployment, the Control Editors provide a more selective deployment in which subsequent changes to the device configurations can be made with minimal interruption to the process.

The Control Editors provide a variety of tools for monitoring the device as it is brought online and initialized from the FBM222 master. The Field Device Expert for the FBM222 includes a communication DTM that provides diagnostics and live lists for each port, while Field Device Expert for the device offers online displays of device data and screens that compare the physical device to the configuration database.

Commissioning Wizard

You can also deploy devices using the Control Software Commissioning Wizard. The wizard matches a physically connected slave device with a configuration in the Galaxy database (Figure 13, left window) and enables you to take one or more of these commissioning actions (see the right window):

Figure 13 - The Commissioning Wizard Provides for Device Deployment, Download and Upload of DPV1 Device Parameters, and Device Initialization

tress : Ident No : Vendor : Model : Device Revision :	Software Revision :	Hardware Revision :					
Ox6f3 Acromed, In 981PB-2012 A	Commissio	oning DEV004 : I	Executing the Comm	nissioning Action	IS		
atching Devices	Configured De	vice	5	-			
ddress Ident No State Vendor Model Order Software 0x6f3 Not Configured Acromag, Inc. 961PB-2012	Address : 6	Ident No : Vendor 0x6f3 Acrom	r : Model : iag, Inc. 981PB-2012	Device Revision :	Software Revision :	Hardware Revision :	
	Physical Device Address : 6	Ident No : Vendor 0x6f3 Acrom	r: Model : ieg, Inc. 981PB-2012	Order ID :	Software Revision :	Hardware Revision :	Serial No :
talizing	Commissioni	ng Actions	d Vendor DTM Data	Upload Vendor DTM De	ita 🖂	Enable Communications	
Re Restrict Control Co	Order	Action Devices		Result			
puesting Derive Last	1 2	Enable Communications					

- Deploy the device, that is, download the device ECB to the Foxboro DCS system.
- Download to a device DPV1 device parameters that were configured with a vendor DTM.
- Upload from a device DPV1 device parameters to a vendor DTM and the Galaxy database.

- Bring the device online to the control system and begin cyclic and acyclic data exchange.
- · Change the device address.

Field Device Expert Workshop Edition

The Control Room edition of Field Device Expert has the features previously described. This edition is used on workstations running the Control Software with Foxboro® control processors and FBM222s. In addition, the Control Editors and Field Device Expert (without the universal PROFIBUS DTM) are offered in a bundled Instrument Workshop edition. This off-platform edition uses a third-party interface card and communication DTM to provide DPV1 communication with the devices, and the device manufacturer's DTM to calibrate, pre-commission, and test instrumentation prior to installation and connection to the FBM222.

Upgrading Legacy FBM223 to FBM222 With the Control Editors

When configuring an FBM222 to replace a legacy FBM223 in the Control Editors, the FBM223's database, port configuration files (*.PMA), slave device configuration files (*.PSL), and GSD files can be used for the FBM222 as is.

For instructions on performing this upgrade, see the "FBM223 to FBM222 Upgrade Procedure" appendix in *PROFIBUS Networks Implementation Guide* (B0750BE).

Hardware and Software Requirements

These are the hardware and software requirements for Field Device Expert for PROFIBUS.

Control Room Edition Requirements

Computer

• Follow the hardware requirements for the Control Editors as specified in *Control Editors* (PSS 41S-10EDITOR).

System Hardware

- The EcoStruxure[™] Foxboro DCS Control Network-connected station committed as AW70, WP70, WSTA70, or WSRV70 at I/A Series[®] software v8.7-v8.8 and EcoStruxure[™] Foxboro DCS Control Core Services v9.0 or later.
- EcoStruxure[™] Foxboro DCS FCP280 at Control Core Services software v9.0 or later with FBM222.
- ZCP270 or FCP270 at I/A Series software v8.7-v8.8 and Control Core Services software v9.0 or later with FBM222.

Field Device Expert needs an S39 FCS Platform License.

Instrument Workshop Edition Requirements

- Laptop, desktop, or server class computer with 2.18 Ghz (or faster) Intel Pentium® 4 processor (or higher), minimum of 16.0 GB free hard disk space, and minimum of 2.0 gigabytes RAM.
- DVD/CD drive
- Video Graphic Accelerator Card: 32 MB of memory
- Communications Network: 100 MHz TCP/IP Ethernet
- · Compatible third-party interface card for one PROFIBUS port
- Third-party PROFIBUS communication DTM
- PROFIBUS junction devices, power supplies, and fieldbus terminations as necessary to connect the field devices.

Sizing Guidelines

The Field Device Expert for PROFIBUS along with the FBM222 provide these capacity limitations:

125 PROFIBUS slave devices assigned to an FBM222 port.

For additional information on the FBM222, see FBM222, Redundant PROFIBUS Communication Module (PSS 41H-2S222).

WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

Schneider Electric Systems USA, Inc. 70 Mechanic Street Foxboro, Massachusetts 02035–2040 United States of America

Global Customer Support: https://pasupport.se.com

As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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PSS 41S-10FDMPB, Rev B