FAQ about Drive Technology

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Technology CPUs FAQ

Controlling a SINAMICS ALM via PROFIBUS

SIEMENS



Entry ID: 21971603

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http://support.automation.siemens.com/WW/view/en/21971603

Question

How can I control a SINAMICS "Active Line Module" (ALM) via Profibus DP Drive?

Answer

Follow the steps of the description.

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1 Background

There is no technology object for the SINAMICS ALM (active line module) and it can consequently not be powered up like an axis via MC_Power. However, the option (from S7-Technology V2.0 on) of limited access to devices at PROFIBUS DP Drive (byte address 0-63) exists via the MC blocks MC_ReadPeriphery and MC_Write Periphery. This enables to power up the ALM from the user program.

In the following, an example is used to describe this process.

2 Configuration Instructions

2.1 HW Config

1. Create the SINAMICS drive in the hardware configuration (in the example PROFIBUS address 4 is to be assigned to the drive).

Control - Simaric Solo(1) (control - Alm Control)
nal Scarou Fair Turc Wew Obdours Williagow Helb
PROFIBUS(1): DP master system (1)
3 Jechnologie
X3 DP(DRIVE)
X11 E/A
4 DP Slave Properties 🔀
5 6 Control Configuration Clash Construction
8 Default 🗂 Same for all objects
9 Object Telegrams
1 Standard telegram 1, PZD-2/2
Survey (Detail /
Slot Modul D
A master-Slave configuration 1
2 ST CPU 31716E V1 MEV/DP Master: (2) DP(DRIVE)
3 Jacknolo - Station: SIMATIC 300(1)
X3 DP(DR/VE) Comment.
X11 EA
5 OK Cancel Help

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- 2. For the moment, do not modify the telegram setting Standard telegram 1, PZD2/2.
- 3. Do not forget to select clock synchronization for SINAMICS in the Clock Synchronization tab.
- 4. Save and compile your hardware configuration.

Figu	ure 2-2								
<u>D</u>	HW Co	nfig -	[SIMA]	FIC 3	00(1)	(Config	uration)	AL	M_Control]
00	<u>Station</u>	<u>E</u> dit	Insert	PLC	⊻iew	Options	<u>W</u> indow	<u>H</u> elp	
	<u>N</u> ew Ope	 n	JE				Ctrl+N Ctrl+O		<u>₩</u> <u>N</u>
	Ope	e	v .						OFIBUS(1): DP master system (1)
	<u>S</u> ave								
	Save	e and C	ompile	h.			Ctrl+S		
	Prop	er <u>t</u> ies		Ů					(4) SINAMII
	_ <u>I</u> mpo	ort							
	- <u>E</u> xpo	ort							
	Con:	sistency	/ C <u>h</u> eck				Ctrl+Alt+	ŀК	
	Che	:k CiR C	Iompatibi	ilit <u>y</u>			Ctrl+Alt+	-F	
	- <u>P</u> rint						Ctrl+P		
	Print	Previe	<u>w</u>						
	Page	e Setup							
	1 AL	M_Cont	rol\SIMA Maua2D	TIC 30	00(1) SIMATI	C 200/1)			
	i 21e 3te	st\SIMA	TIC 300	(1)	JIMATI	C 300(1)			
	<u>4</u> Te	mplate_	_fl_shear	s_exp	\SIMAT	TC 300(0)			
<	E <u>x</u> it						Alt+F4		
	- 	ເຫ ເມ	3						

5. Subsequently exit the hardware configuration.

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2.2 S7T Config

1. Open the technology Opening for the first time immediately opens S7T Config.

Figure 2-3



2. Now configure your SINAMICS drive (you can of course also perform an automatic configuration online).



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2.2.1 Configuration SINAMICS

1. Double-clicking Configure drive unit results in the menu-driven configuration of SINAMICS.

Configuration - SINAMICS	S_S120 - Insert infeed
Option module Infeed Infeed PROFIBUS process da Insert drive Summary	This wizard helps you to configure a drive unit with a drive and optionally with an infeed. Are you using a SINAMICS infeed with DRIVE-CLiQ connection in this drive unit?
	< <u>B</u> ack <u>Continue</u> <u>H</u> elp

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2. Select Yes and Continue, subsequently the ALM is selected

Configuration - SINAMIC	S_S120_1 - Infeed				
Option module	Configure the infeed:				
✓Insert infeed	<u>N</u> ame:	Infeed_1			
Infeed - additional data	Operating type:	Active lin	ne module		-
Insert drive	Supply voltage range:	3AC 380	- 480 V		-
Summary	Cooling method:	Internal a	air cooling		•
	Туре:	Everythin	ng except C	abinet Elements	-
	Selection				
	Type (order no.) ISSL 3130-7TE 21-644x	Rate 16 kW	Rated 27 A	Code num	
	6SL3130-7TE23-6AAx	36 kW	60 A	10016	
	6SL3130-7TE28-0AAx	80 kW	134 A	10018	
in the second seco	6SL3330-7TE31-2AAx	132	200 A 210 A	16001	
=	6SL3330-7TE32-6AAx 6SL3330-7TE33-8AAx	160 235	260 A 380 A	16002 16004	
	6SL3330-7TE35-0AAx 6SL3330-7TE36-1AAx	300 380	490 A 605 A	16005 16006	
	691 3330.7TE 39.4AA	500	940 A	16008	×
	I Ine <u>filter</u> available	o ovoiloblo			
		s avaliable			
	<u>Parallel connection</u>				
	< <u>B</u> ack	<u>C</u> ontinue >	,		<u>H</u> elp
	<u>Voltage sensing modul</u> <u>Parallel connection <u>Back</u></u>	e available <u>C</u> ontinue >	·]		<u>H</u> elp

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3. In the next window, select Siemens telegram 370 for the infeed (370)

Configuration - SINAMIC	S S120 1 - PROFIBUS process data exchange (infeed)	
Option module Insert infeed	Infeed: Infeed_1	
 ✓Infeed ✓Infeed - additional data 	Select the PROFIBUS message frame type:	
☐ PF01F18US processed ☐ Insert drive ☐ Summary	PROFIBUS P20 message frame: SIEMENS telegram 370 for the infe SIEMENS telegram 370 for the infeed (370) Free telegram configuration with BICO (999)	\triangleright
	Length: Input data (words):	
	Output data (words):	
	Notes: 1. The PROFIBUS process data will be interconnected to BICO parameters in accordance with the selected message frame type. These BICO parameters cannot be subsequently changed.	
	< <u>B</u> ack <u>C</u> ontinue > <u>H</u> elp	

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4. You are then prompted to define your power unit(s).

Figure 2-8 Configuration - SINAMIC	CS_S120_1 - Insert drive
Option module Insert infeed Infeed Infeed Infeed - additional data PROFIBUS process da Incert drive Summary	Do you want to configure a drive (power unit, motor, encoder)?
	< <u>B</u> ack <u>C</u> ontinue > <u>H</u> elp

Note The following steps, the configuration of SINAMICS, are not described explicitly since they are not part of the FAQ.

The following components or settings were used in the example and the respective information is displayed in the figures below:

- A double motor module is used.
- The motors feature a Drive-CliQ interface.
- The selected Profibus message frame is 105 to ensure that DSC can be used.

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2.3 Aligning S7T Config with HW Config

1. After completing the SINAMICS configuration (Chapter 2.2.1), in the Navigator in SINAMICS S120 open Configuration.

Now you see the PROFIBUS communication of your configured SINAMICS drive:

Figure 2-9

Market S7T Config - ALM_Control					
Project Edit Insert Target system View Options	s <u>W</u> indow <u>H</u> elp				
E ALM Control	I SINAMICS_S120 - Conf	iguration			
Insert single drive	PROFIBUS message frame	Version overview			
E-CONTECHNOLOgie	The drive objects are suppli	ed with data in the following sequence from the Pf	ROFIBUS mess	age frame:	
🕀 🧰 External Encoders	Object Drive object -Ne	D. Message frame type	l address 0 a	address Axi	
E CAMS	1 Infeed_1 2	SIEMENS telegram 370 for infeed	256259 25	56259	
□ INAMICS_S120	2 Drive_1 3	SIEMENS telegram 105	?????? ??	????? Achs	
> Overview	3 Drive_2 4	SIEMENS telegram 105	?????? ??	????? Achs	
> Configuration	4 Control_Unit 1	Free message frame configuration with BICO			
Control_Unit Configuration → Configuration → Control logic → Control logic → Control logic → Control logic → Sourchastion ⊕ → Communication ⊕ → Diagnostics	<				
G Sprives → Insert drive B Montrop Montrop Montrop	<u>«</u>		Align with	<u>H</u> W Config	
				Close	Help
	SINAMICS_3120	0/01			
Press F1 to open Help display.		Offline mode			

- 2. Click the Align with HW Config button.
- 3. Click Yes in the message box to start the hardware addressing.

Alignmen	t with HW Config
1	The PROFIBUS (DP slave) configuration in HW Config will be reconfigured.
	Note: The alignment with HW Config affects all available drives of this drive unit. Any user-specific message frame extensions will be lost.
	Do you want to carry out the alignment with HW Config now?

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SINAMICS_S120 - Configuration PROFIBUS message frame Version overview The drive objects are supplied with data in the following sequence from the PROFIBUS message frame: Object Drive object -No. Message frame type I address 0 address Axis 1 Infeed_1 2 SIEMENS telegram 370 for infeed 256257 2-6257 2 Drive_1 3 SIEMENS telegram 105 278297 Achse 3 Drive_2 4 SIEMENS telegram 105 278297 Achse 4 Control_Unit 1 Free message frame configuration with BICO	,	I						
Description Version overview The drive objects are supplied with data in the following sequence from the PROFIBUS message frame: Object Drive object -No. Message frame type I address O address Axis 1 Infeed_1 2 SIEMENS telegram 370 for infeed 2 256257 256257 2 Drive_1 3 SIEMENS telegram 105 258277 258277 Achse 3 Drive_2 4 SIEMENS telegram 105 278297 Achse 4 Control_Unit 1 Free message frame configuration with BICO	SINAMI	CS_S120 - C	onfi	guration			_	
The drive objects are supplied with data in the following sequence from the PROFIBUS message frame: Object Drive object -No. Message frame type I address O address Axis 1 Infeed_1 2 SIEMENS telegram 370 for infeed 256257 2 Drive_1 3 SIEMENS telegram 105 258277 258277 Achse 3 Drive_2 4 SIEMENS telegram 105 278297 Achse 4 Control_Unit 1 Free message frame configuration with BICO	PROFIBU	S message fran	ne 🛛	/ersion overview				
Object Drive object -No. Message frame type I address O address Axis 1 Infeed_1 2 SIEMENS telegram 370 for infeed 256257 256257 2 Drive_1 3 SIEMENS telegram 105 258277 258277 Achse 3 Drive_2 4 SIEMENS telegram 105 278297 Achse 4 Control_Unit 1 Free message frame configuration with BICO	The driv	e objects are su	upplie	d with data in the following sequence from the F	PROFIBUS r	nessage fram	e:	
1 Infeed_1 2 SIEMENS telegram 370 for infeed 256257 256257 2 Drive_1 3 SIEMENS telegram 105 258277 258277 Achse 3 Drive_2 4 SIEMENS telegram 105 278297 Achse 4 Control_Unit 1 Free message frame configuration with BICO	Object	Drive object	-No.	Message frame type	l address	0 address	Axis	
2 Drive_1 3 SIEMENS telegram 105 258.277 258.277 Achse 3 Drive_2 4 SIEMENS telegram 105 278.297 278.297 Achse 4 Control_Unit 1 Free message frame configuration with BICO	1	Infeed_1	2	SIEMENS telegram 370 for infeed 📃 💌	256257	256257		
3 Drive_2 4 SIEMENS telegram 105 278297 278297 Achse 4 Control_Unit 1 Free message frame configuration with BICO	2	Drive_1	3	SIEMENS telegram 105	258277	258277	Achse	
Control_Unit 1 Free message frame configuration with BICO	3	Drive_2	4	SIEMENS telegram 105	278297	278297	Achse	
	4	Control_Unit	1	Free message frame configuration with BICO	——			
	<						>	

The addressing is stored outside the process image and has to be changed for the ALM.

- 4. Close the configuration by clicking the Close button. It is important to close this window; if it is not closed, the changes made later are not applied in HW Config.
- 5. Reopen your HW configuration in HW Config. Select the object properties of the drive and select the Configuration tab.

🙀 HW Config - [SIMATIC 300(1) (Configuration) ALM Control]	
Restance Edit Incert RIC View Onlines Window Help	
and solar last and solar to the last solar to the solar t	
	~
🚍 (0) UR	
1	
2 CPU 317T-2 DP	
X1 MPI/DP	
3 Technologie	
X3 PROFIBUS(1): DF	Pmaster system (1)
🕂 (4) SINAMI	DP Slave Properties
7	General Configuration Clock Synchronization
8	
9	Detaut
10 🔍	Object Telegrams
	1 Telegram 370, P2D-171
	2 Telegram 105, P2D-10/10 3 Telegram 105, P2D-10/10
	4 None
2	
Slot Module I address D address Comment	
4 Drive Data 256257	Survey (Detail /
5 Drive Data 256257	
6 Drive Data	Activate
7 Drive Data 258277	Master-Slave configuration 1
8 Drive Data 258277	Master: (2) DP(DRIVE)
9 Drive Data	Station: SIMATIC 300(1)
10 Drive Data 278297	Comment
11 Drive Data 278297	
12 Unive Data	
	Lancel Help
Press F1 to get Help.	

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6. The configuration is locked for inputs and has to be activated. Click Activate...

	Toperfies	
ieneral C	Configuration Clock Synchronization	
	Default	
Object	Telegrams	
1	Telegram 370, PZD-1/1	
2	Telegram 105, PZD-10/10	
3	Telegram 105, PZD-10/10	
	THE REAL PROPERTY AND A DESCRIPTION OF A	
		-
Survey	ate	- -
Activa	ate	J J
Activa Activa Master 9 Master Station	y Detail ate Stare configuration 1 r: (2) DP(DRIVE) n: SIMATIC 300(1)	¥ ¥
Survey Activa Master S Master Station		

Click Yes to confirm the message box. 1.

Fig	gure 2-14	
¢	Configura	ation (4184:63201)
	1	The master/slave configuration has been generated automatically and is therefore blocked for user entries. This is to prevent unintentional user entries. Do you still want to activate the configuration for user entries?
	<u>Y</u> es	No

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8. Select the Detail tab

Figure 2-15	Figure	2-15
-------------	--------	------

DP Slave Pr	operties 🛛 🛛
General Co	nfiguration Clock Synchronization
	Default
Object	Telegrams
1	Telegram 370, PZD-1/1
2	Telegram 105, PZD-10/10
3	Telegram 105, PZD-10/10
4	None
Surve	Detail /
	Levent abient Datase abient
Master-S	lave configuration 1
Master:	(2) DP(DRIVE)
Station:	SIMATIC 300(1)
Comme	nt:
	Conset Units
	Lancei Heip

Note

To ensure that the ALM can be addressed with the blocks MC_ReadPeriphery and MC_WritePeriphery, it is required that the input and output addresses are located in the area 0-63.

DP Slave Properties										
General Configuration Clock Synchronization										
	Slot	In local s	lave		PRO	FIPUs partner			•	
		Туре	Address	Туре	DP addres	I/O-address	Process image	Length		
	4	Actual value	PCD 1	Input	2	50		1		
	5	Setpoint	PCD 1	Output	2	50	V	1		
	6	Axis discon								
	7	Actual value	PCD 1	Input	2	258		10		
	8	Setpoint	PCD 1	Output	2	258		10		
	9	Axis discon								
	10	Actual value	PCD 1	Input	2	278		10		
	11	Setpoint	PCD 1	Output	2	278		10		

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 Change the I/O addresses so that they are located in the area 0-63. In the example, the address area from byte 50 should be used; it is thus required to change address 256 to address 50 in SLOT 4 and in SLOT 5.

10. Click OK to apply the changes.

P Slave Properties								
ienera	al Configuration	n Clock S	ynchron	ization				
Slot	in local s	lave		PRO	FIBUS partner		_	
	Туре	Address	Туре	DP address	I/O-address	Process image	Length	
4	Actual value	PCD 1	Input	2	50		1	
5	Setpoint	PCD 1	Output	2	50		1	
6	Axis discon							
7	Actual value	PCD 1	Input	2	258		10	
8	Setpoint	PCD 1	Output	2	258		10	
9	Axis discon							
10	Actual value	PCD 1	Input	2	278		10	
11	Setpoint	PCD 1	Output	2	278		10	
12	Axis discon						_	
\ Si	urvey <u>A</u>Detail	1		4			•	
Insert slot Delete slot								
Station: SIMATIC 300(1)								
Comment:								
OK Cancel Help								

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11. A message box for the further proceeding is displayed. Confirm by clicking OK

Figure 2-18						
Configure	ation (4184:63215)	×				
1	Notice! If the telegram has been changed, you have to open the PROFIBUS telegram configuration in SCOUT/STARTER of SINAMICS "SINAMICS_S120" and press the "Adjust to HW config" button. Only then will SCOUT/STARTER be adjusted to HW config.					
Do not display this message again.						
<u> </u>						

12. Save and compile the hardware configuration and (important) exit it.



13. In the Navigator, reopen the SINAMICS configuration

igure 2-20									
Market S7T Config - ALM_Control									
Project Edit Insert Target system View Options Wir	ndow <u>F</u>	<u>i</u> elp							
ALM_Control	INAMI	:S_S120 - C	onfi	guration					
The section of the se	ROFIBU	5 message fran	ne \	/ersion overview					
Imp Similar 300(1) The drive objects are supplied with data in the following sequence from the PROFIBUC measure frame:									
EXTERNAL ENCODERS	Object	Drive object	-No.	Message frame type	1	l address	0 address	Axis	
🕀 🛄 CAMS	1	Infeed_1	2	SIEMENS telegram 370 for infeed		5051	5051	-	
E 🗒 SINAMICS_5120	2	Drive_1	3	SIEMENS telegram 105		258277	258277	Achse	
> Overview	3	Drive_2	4	SIEMENS telegram 105		278297	278297	<i>§</i> chse	
Configuration	4	Control_Unit	1	Free message frame configuration with E	ICC				

The address area of the infeed must display the addresses set in HW Config!

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14. Save and compile your technology.

S7T Config - ALM_Control	- 0
Project <u>of growt</u> Iarget system <u>Vi</u> ew <u>O</u> ption	ins <u>Wi</u> ndow <u>H</u> elp
× Al M Control	
Insert single drive	PROFIRITS messane frame Version overview
SIMATIC 300(1)	
E AXES	The drive objects are supplied with data in the following sequence from the PROFIBUS message frame:
EXTERNAL ENCODERS CAMS	Object Drive object -No. Message frame type I address 0 address Axis
E IsinAMICS_5120	1 infeed_1 2 SIEMENS telegram 3/0 for infeed 500.57 50.57 258.277 258.277 Achse
> Overview	Compilation 278297 278297 Achse
> Topology	
Control_Unit	40%
Configuration	
> Control logic	Cancel
🕀 🔄 Input/output component	Alian with LDU Config.
nsert drive	
	Close Help
Technology	f SINAMICS \$120

- 15. You can now configure your technology objects. This step is not displayed explicitly.
- 16. After completing the configuration of the technology objects, save and compile the technology (the consistency can also be checked) and subsequently exit S7T Config.

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2.4 Technology Objects Manager (TOM)

Two simple positioning axes were created for our example, Achse_1 was assigned to Antrieb_1 and Achse_2 was assigned to Antrieb_2.

If the TOM was opened and if new technology objects were added, the data are reloaded after exiting S7T Config.

1. Confirm the message box by clicking OK

Figure 2-22

Edit technology objects (1114:2)						
1	The data was modified and will be reloaded.					
<u> </u>						

2. Create or update the technology DBs

Figure 2-23 Technology Objects Management (TOM) -- ALM_Control\SIMATIC 300(1)\CPU 317T-2 DP Technology objects Edit View Options Window ? 🗃 🖬 👗 🖻 💼 📂 📢 🞬 S7-Programm(1) (Technology\Technologieobjekte) -- ALM_Control\SIMATIC 300(1)\CPU 317T-2 DP Technology DBs in block folder Delete DB Symbol Technology Comment < Technology DBs not yet created (Defaults list) ÷ Create Technology Comment DB Symbol 0)aten für Trace des MC-Subsystem 4 objects selected

3. The TOM can now be exited.

2.5 Simatic Manager

If the MC blocks have not yet been copied into the project from the S7-Tech library, this should be done now. The technology DBs also have to be transferred.

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3 The Block ALM_Control

The MC_WritePeriphery block is used to control the ALM. The MC_ReadPeriphery block is used to read back the status information of the ALM.

The block ALM_Control was written to make this process more convenient. It takes the control of the ALM and uses the above-mentioned blocks.

To simplify the control, a block was created which includes these two blocks and a small control logic.

	AL	M_Control			
	BO	EN	Rdy_PowerUp	BO	Ready for power-up
Power up	BO	ON	RUN	BO	Run
Acknowledge fault	BO	Acknowledge	On_inhibit	BO	On inhibit
ALM					
No Profibus error	BO	DP_Slave_OK	Alarm	BO	Warning
Input address	I	IN_Addr	Fault	BO	Fault
Output address	I	OUT_Addr	ZSW_ALM	W	Status word (370)
			ErrorID_Read	W	ErrorID of MC_ReadPeriphery
			ErrorID_Write	W	ErrorID of MC_WritePeriphery
			ENO	BO	

3.1 Input parameters

Parameter	Data type	Initial value	Description
ON	BOOL	FALSE	As long as ON=True, it is tried to power up the ALM. The ALM goes to RUN mode if there are no errors preventing the enable.
Acknowledge	BOOL	FALSE	In the event of a fault of the ALM, this fault can be acknowledged with Acknowledge =TRUE.
DP_Slave_OK	BOOL	FALSE	The signal of the "StationLifeList[x]" (node accessible at DP Drive) from the MCDevice data block has to be connected to this input
IN_Addr	INT	0	Byte input start address of the ALM from the hardware configuration (possible values: 0-62).
Addr	INT	0	Byte output start address of the ALM from the hardware configuration (possible values: 0-62).

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3.2 Output parameters

Table 3-2

Parameter	Data type	Initial value	Description			
Rdy_PowerUp	BOOL	FALSE	Feedback of the ALM indicating that it is in Ready for power-up mode.			
RUN	BOOL	FALSE	Feedback of the ALM indicating that it is in Run mode.			
On_inhibit	BOOL	FALSE	Feedback of the ALM that it is in On_inhibit mode.			
Alarm	BOOL FALSE		There is a warning at the ALM.			
Fault	It BOOL FALSE		There is a fault at the ALM.			
ZSW_ALM	ZSW_ALM WORD 0		Complete status word (370) of the ALM for additional information.			
ErrorID_Read	WORD	0	"ErrorID" output of the MC_ReadPeriphery block			
ErrorID_Write WORD 0		0	"ErrorID" output of the MC_WritePeriphery block.			

3.3 DP_Slave_OK connection

This connection signals the ALM_Control block whether the connection to SINAMICS is established.

The technology data block MCDevice contains the variable StationLifeList[0..127]. This variable displays a list of the accessible nodes at PROFIBUS DP(DRIVE) in an ARRAY. The number of the ARRAY element corresponds to the PROFIBUS address. Value 1 of the element means that the node is accessible, value 0 means that the node is not accessible.

The bit representing the SINAMICS station now has to be transferred to the DP_Slave_OK connection.

Example

The Profibus address of SINAMICS selected in HW Config is 4 (see above). From MCDevice (DB 12 was selected in the example during generating the technology DBs) the data bit DBX44.4 ensues for the Profibus node with address 4. Thus the overall address is DB12.DBX44.4

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						ן ר
9 no.:	12					
Symbol: MCDevice						
Type: MC device					Help	
Address	Name	Туре	Actual value	Comment		
22.0	UpdateFlag	WORD	W#16#0	Update flag		
24.0	UpdateCounter	WORD	W#16#0	Update counter		
26.0	ErrorID	WORD	W#16#0	ID of the last error		
28.0	ErrorBuffer[0]	WORD	W#16#0	First 3 ErrorIDs		
30.0	ErrorBuffer[1]	WORD	W#16#0			
32.0	ErrorBuffer[2]	WORD	W#16#0			
34.0	Reserve34	INT	0	Reserved		
36.0	MaxLoopDuration	REAL	0.000000e+000	Maximum command loop duration in [ms]		
40.0	CmdLoopDuration	REAL	0.000000e+000	Average command loop duration in [ms]		
44.0	StationLifeList[0]	BOOL	FALSE	Station life list (DP-MC nodes)		
44.1	StationLifeList[1]	BOOL	FALSE			
44.2	StationLifeList[2]	BOOL	FALSE			
44.3	StationLifeList[3]	BOOL	FALSE			
44.4	StationLifeList[4]	BOOL	FALSE			
44.5	StationLifeList[5]	BOOL	FALSE			
44.6	StationLifeList[6]	BOOL	FALSE			
44.7	StationLifeList[7]	BOOL	FALSE			
	Address 22.0 24.0 24.0 24.0 24.0 30.0 30.0 30.0 40.0 40.0 44.1 44.2 44.5 44.5 44.6	ano.: 12 mbot: MCDevice pp:: MC device Address Name 22.0 UpdateFlag 24.0 UpdateCounter 26.0 ErrorBUTer[1] 30.0 ErrorBuffer[1] 32.0 ErrorBuffer[1] 34.0 Reserve34 36.0 MaxLoopDuration 44.1 StationLifeList[1] 44.2 StationLifeList[2] 44.3 StationLifeList[2] 44.4 StationLifeList[3] 44.5 StationLifeList[4] 44.5 StationLifeList[5] 44.6 StationLifeList[5]	ano.: 12 mbot: MCDevice pp:: MC device Address Name Type 22.0 UpdateFlag WORD 24.0 UpdateCounter WORD 26.0 ErrorBuffer[0] WORD 30.0 ErrorBuffer[1] WORD 32.0 ErrorBuffer[2] WORD 34.0 Reserve34 INT 35.0 MaxLoopDuration REAL 44.1 StationLifeList[0] BOOL 44.3 StationLifeList[1] BOOL 44.4 StationLifeList[2] BOOL 44.5 StationLifeList[4] BOOL 44.5 StationLifeList[7] BOOL 44.5 StationLifeList[7] BOOL 44.6 StationLifeList[7] BOOL	a no.: 12 mbot: MCDevice Address Name Type Address Name Type Address Name Type Actual value 22.0 UpdateFlag WORD 24.0 UpdateCounter WORD W#16#0 26.0 ErrorBuffer[0] WORD W#16#0 30.0 ErrorBuffer[2] WORD W#16#0 32.0 ErrorBuffer[2] WORD W#16#0 33.0 ErrorBuffer[2] WORD W#16#0 36.0 MaxLoopDuration REAL 0.000000e+000 40.0 CrationLifeList[0] BOOL FALSE 44.1 StationLifeList[2] BOOL FALSE 44.3 StationLifeList[3] BOOL FALSE 44.4 StationLifeList[3] BOOL FALSE 44.5 StationLifeList[3] BOOL FALSE 44.5 StationLifeList[3] BOOL FALSE 44.4 StationLifeList[7]	Bino: 12 McDevice pp: MC device Address Name Type Actual value Comment 22.0 UpdateFlag WORD W#16#0 Update Flag 24.0 UpdateCounter WORD W#16#0 Lipdate counter 25.0 ErrorBuffer[0] WORD W#16#0 Lipdate counter 28.0 ErrorBuffer[1] WORD W#16#0 First 3 ErrorIDs 30.0 ErrorBuffer[2] WORD W#16#0 Reserved 34.0 Reserve31 INT 0 Reserve31 REAL 0.00000e+000 Average command loop duration in [ms] 44.0 StationLifeList[0] BOOL FALSE StationLifeList[2] BOOL FALSE 44.1 StationLifeList[3] BOOL FALSE E E 44.4 StationLifeList[3] BOOL FALSE E E 44.5 StationLifeList[3] BOOL FALSE E E 44.4.5 StationLifeL	Inc: 12 mbot: MCDevice mbot: MCDevice mbot: MCdevice McCevice Help Address Name Type Actual value Comment 22.0 UpdateFlag WORD W#16#0 Update flag Help 24.0 UpdateCounter WORD W#16#0 Lipstate counter Zato 26.0 ErrorBuffer[0] WORD W#16#0 First 3 ErrorIDs Saton Saton 30.0 ErrorBuffer[1] WORD W#16#0 First 3 ErrorIDs Saton Saton SatonLifeList[2] WORD W#16#0 First 3 ErrorIDs 30.0 ErrorBuffer[2] WORD W#16#0 Reserved SatonLifeList[3] SatonLifeList[3]

3.4 Connections IN_Addr and OUT_Addr

In the example, address 50 (hardware configuration) was set as input and output address for the ALM. For this reason, this number is to be specified at the inputs IN_Addr and OUT_Addr.

Figure 3-2

DP Slave Properties									×
General Configuration Clock Synchronization									
	Slot In local slave		PROFIBUS partner					<u> </u>	
		Туре	Address	Туре	DP address	I/O-address	Process image	Length	
	4	Actual value	PCD 1	Input	2	50		1	
	5	Setpoint	PCD 1	Output	2	50	V	1	
	6	Axis discon							
	7	Actual value	PCD 1	Input	2	258		10	
	8	Setpoint	PCD 1	Output	2	258		10	
	9	Axis discon							
	10	Actual value	PCD 1	Input	2	278		10	_
	11	Setpoint	PCD 1	Output	2	278		10	

Controlling a SINAMICS ALM via Profibus Entry ID: 21971603

3.5 Recommendations

We recommend locking the "RUN" feedback with the "Enable" for the MC_Power of the axis. An axis should only be activated during the infeed.

In addition, it should be avoided to deactivate the infeed during operating an axis.

3.6 LAD and FBD

The block is also available as source. To be able to compile the source, it is required to specify an FBxxx with ALM_Control symbol in the symbol editor. The generated block can be opened and the view can be set to FBD or LAD.