

Communication Interfaces

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Energy Sector

Which facilities does SIPROTEC 4 offer ?

IEC-Interface

- The "VDEW-interface " is international standard IEC 60870-5-103 (without parameterizing)
- According to recommendation of VDEW switching operations are possible

PROFIBUS-Interface

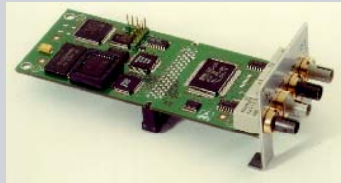
- PROFIBUS FMS is a protocol which includes all functions. Excellent in conjunction with SICAM
- PROFIBUS DP – a protocol for simpler applications in conjunction with automatization systems for industrial application.

Additional interfaces

- Modbus
- DNP 3
-

Which features does SIPROTEC 4 offer?

variable interfaces



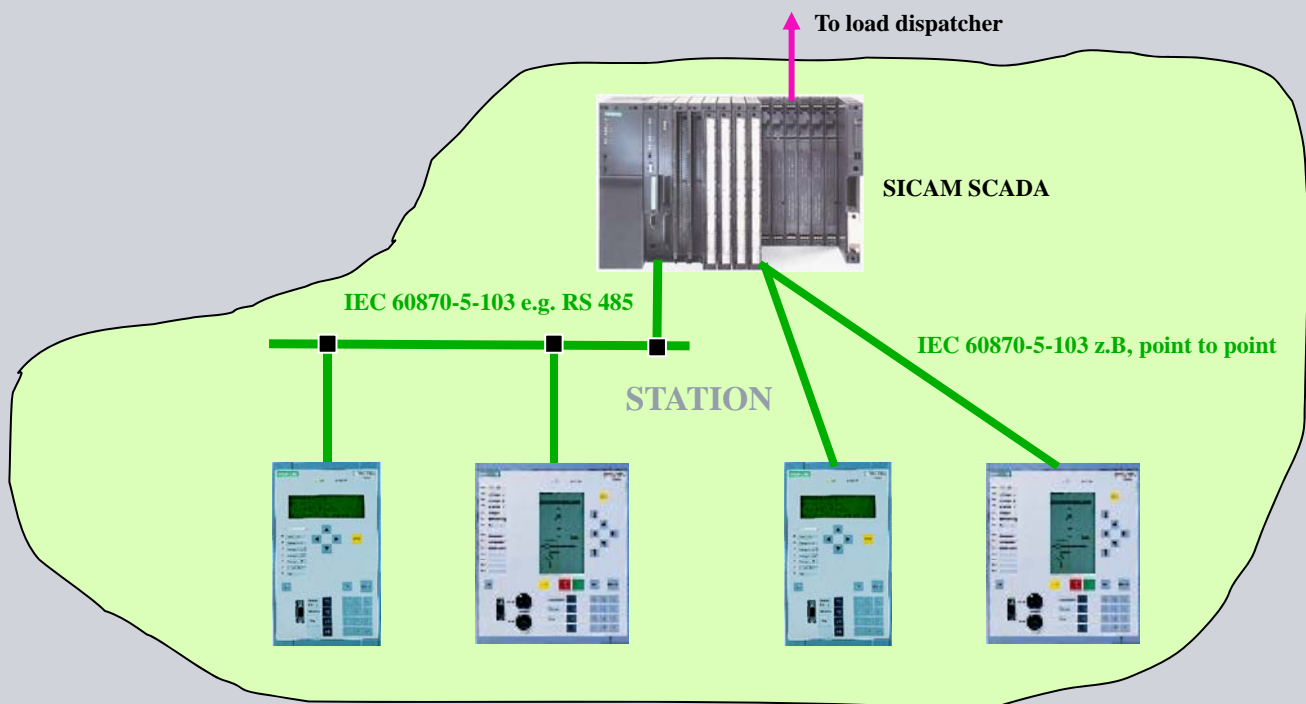
as fibre optics



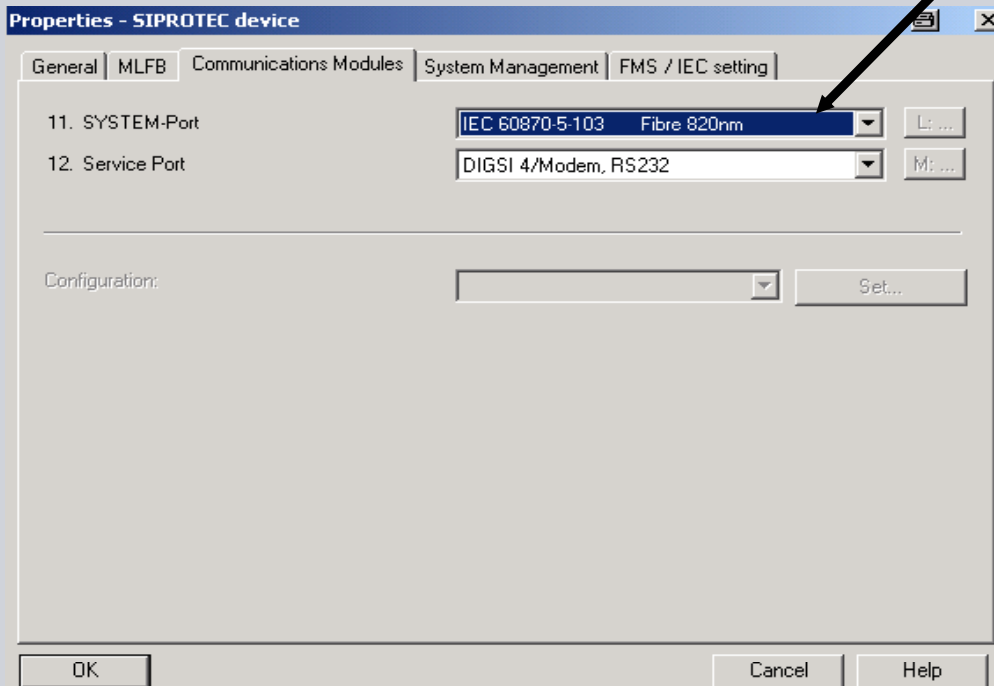
or electrical

- exchangeable
- refittable

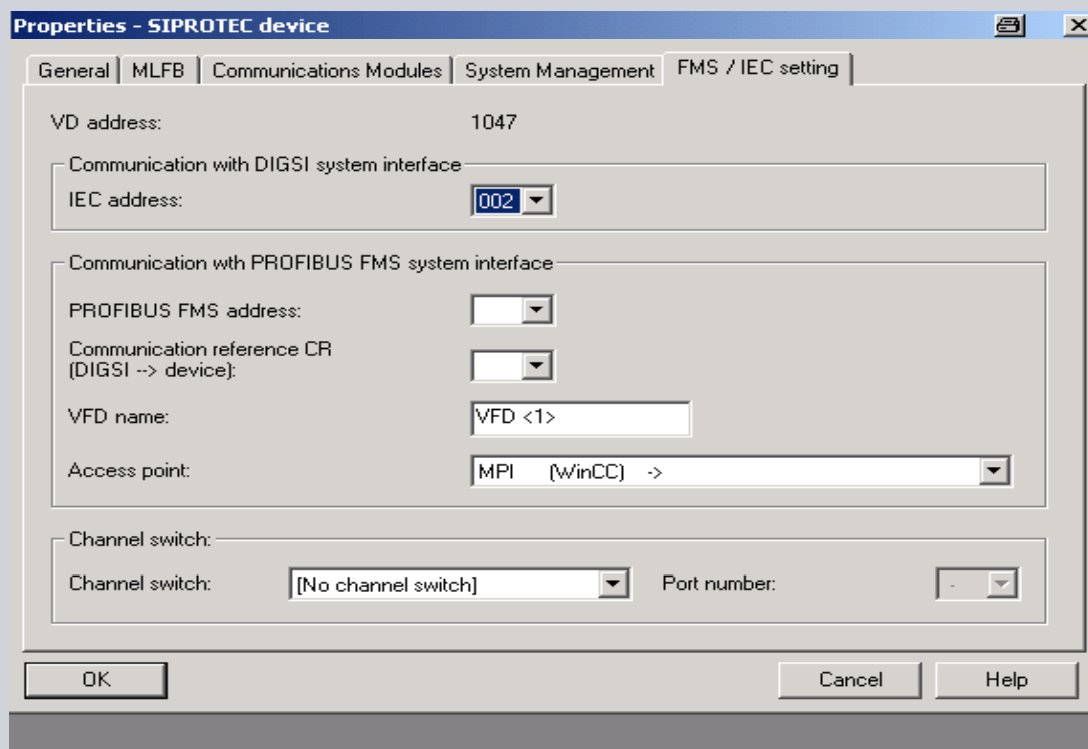
Communication: Setup with IEC 60870-5-103

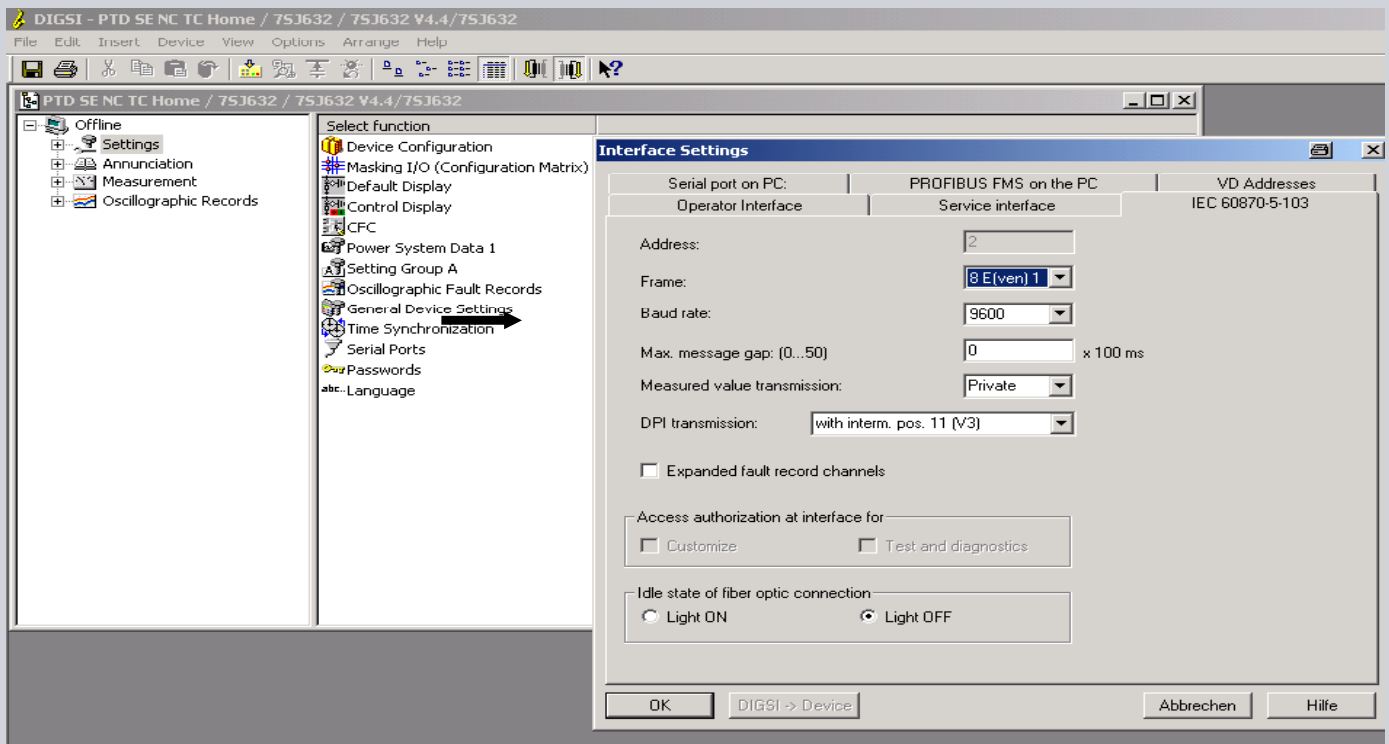


Select the communication interfaces

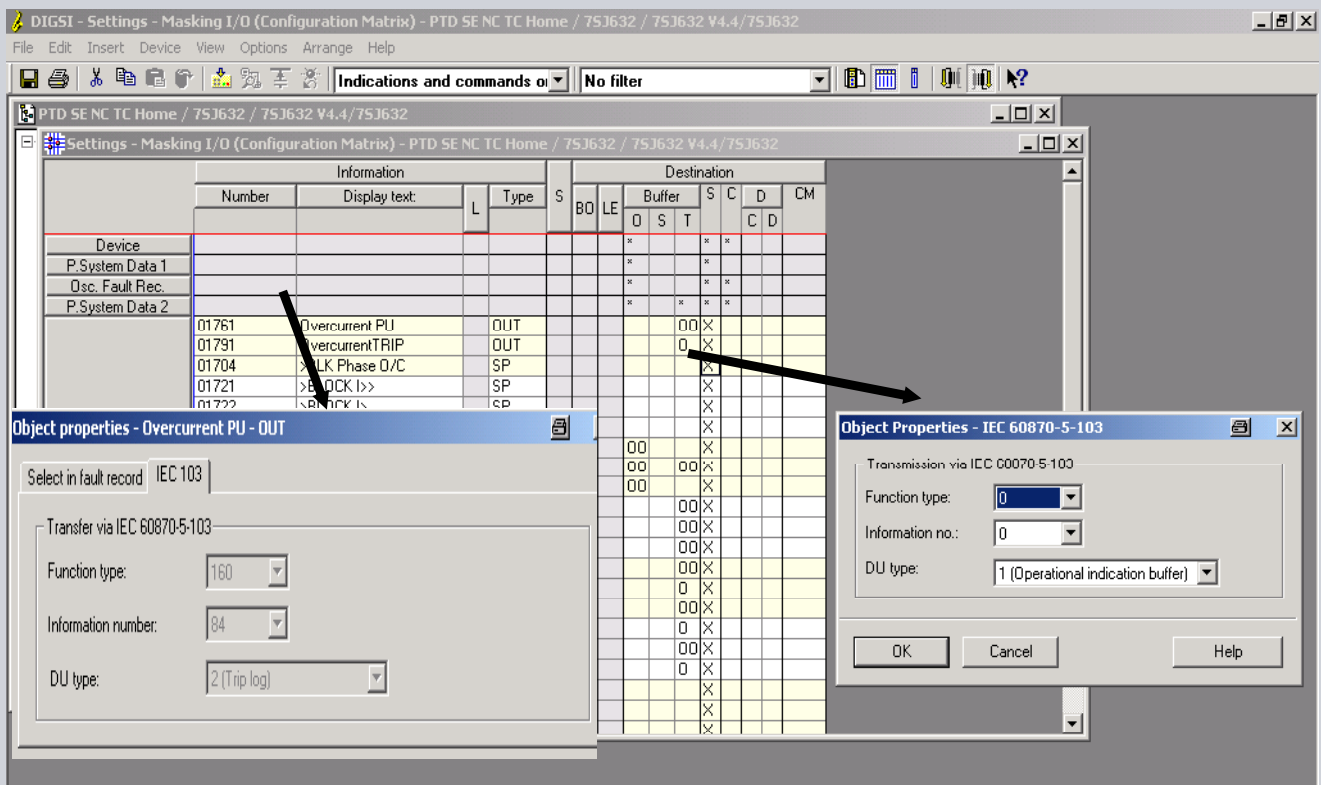


Set the IEC address

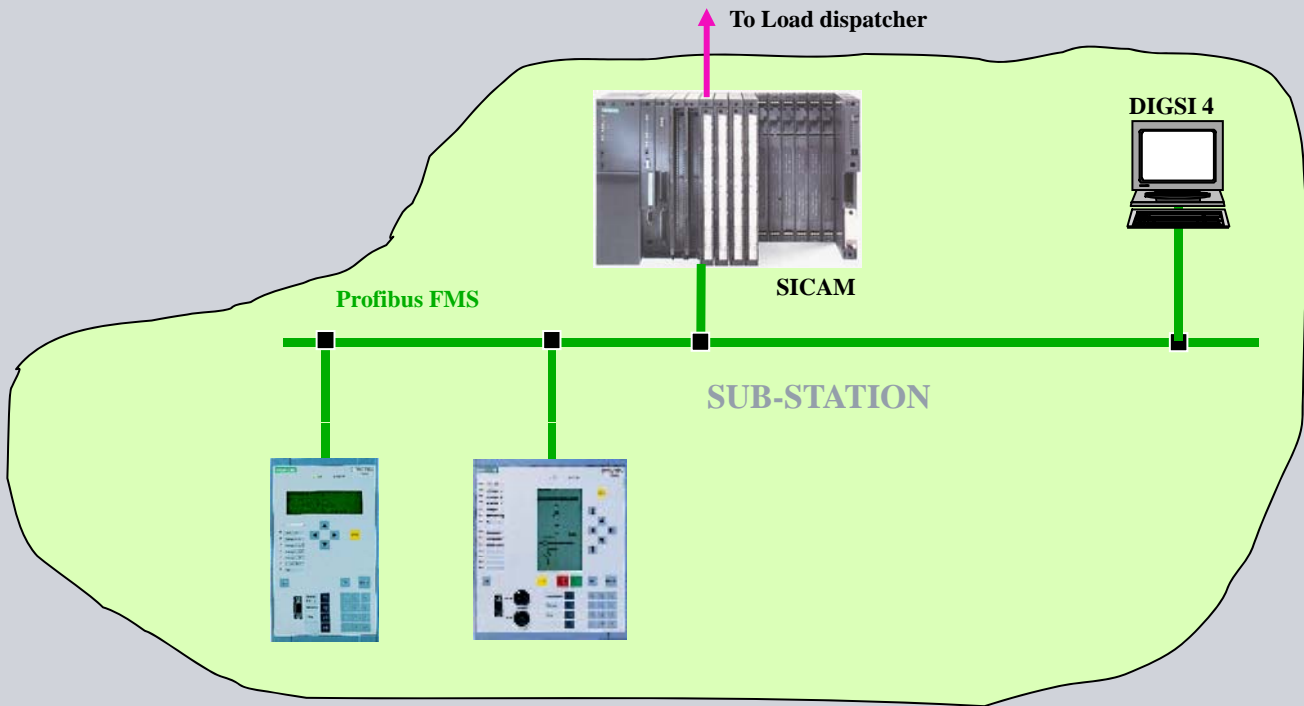




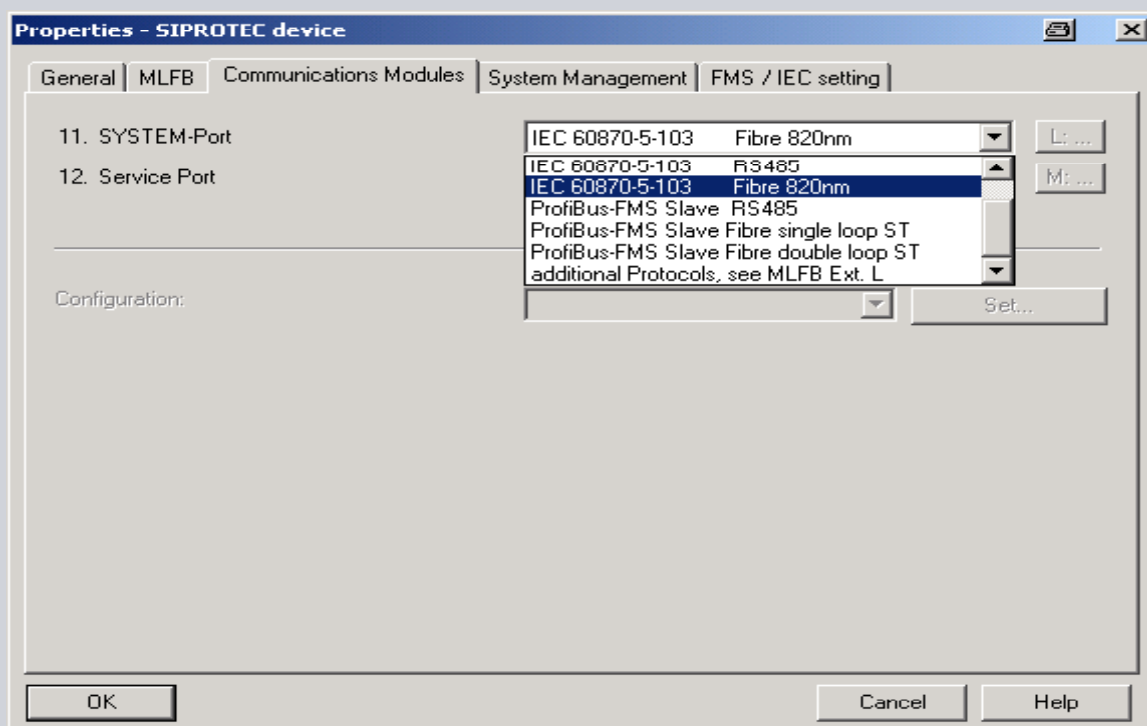
Masking with IEC protocol

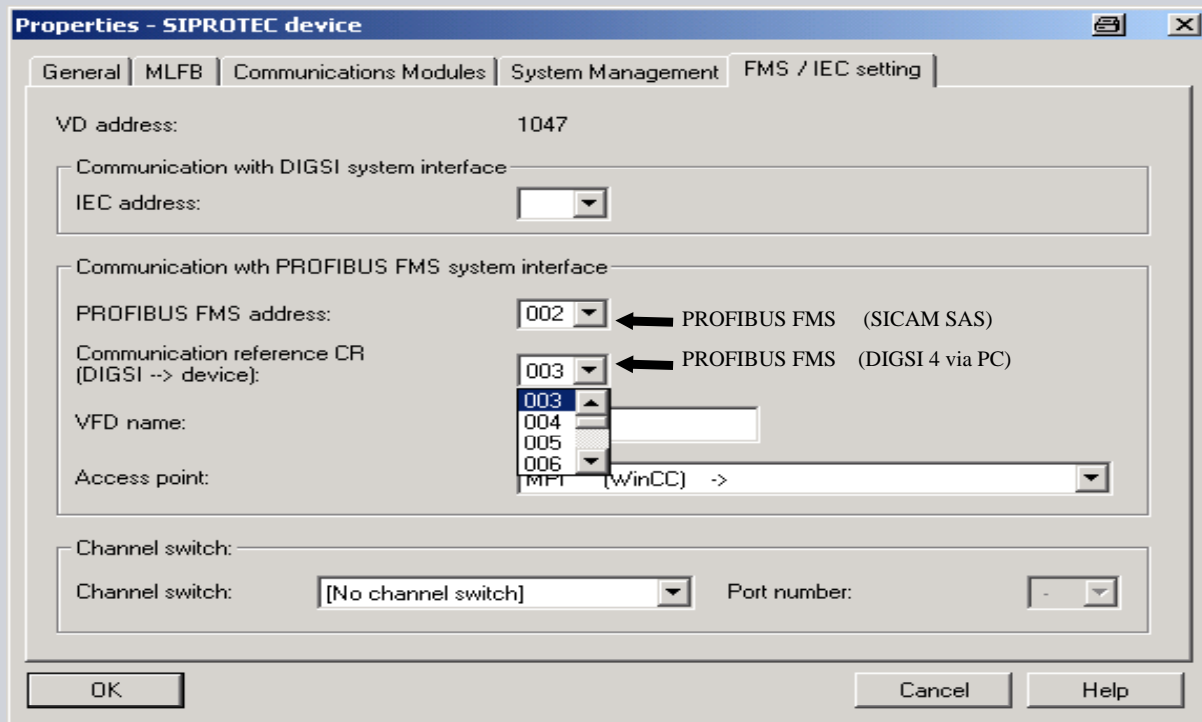


Communication: Setup with Profibus FMS

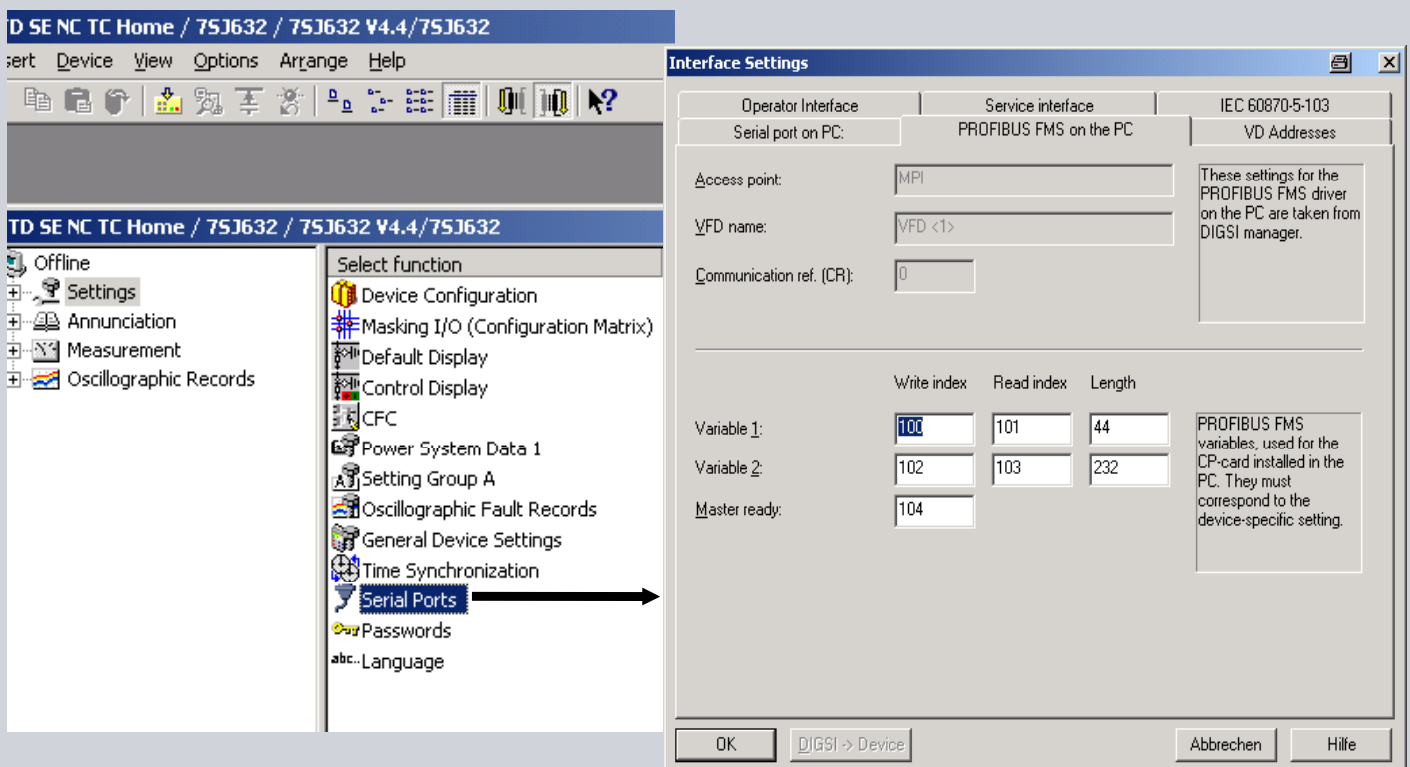


Setting the communication interface

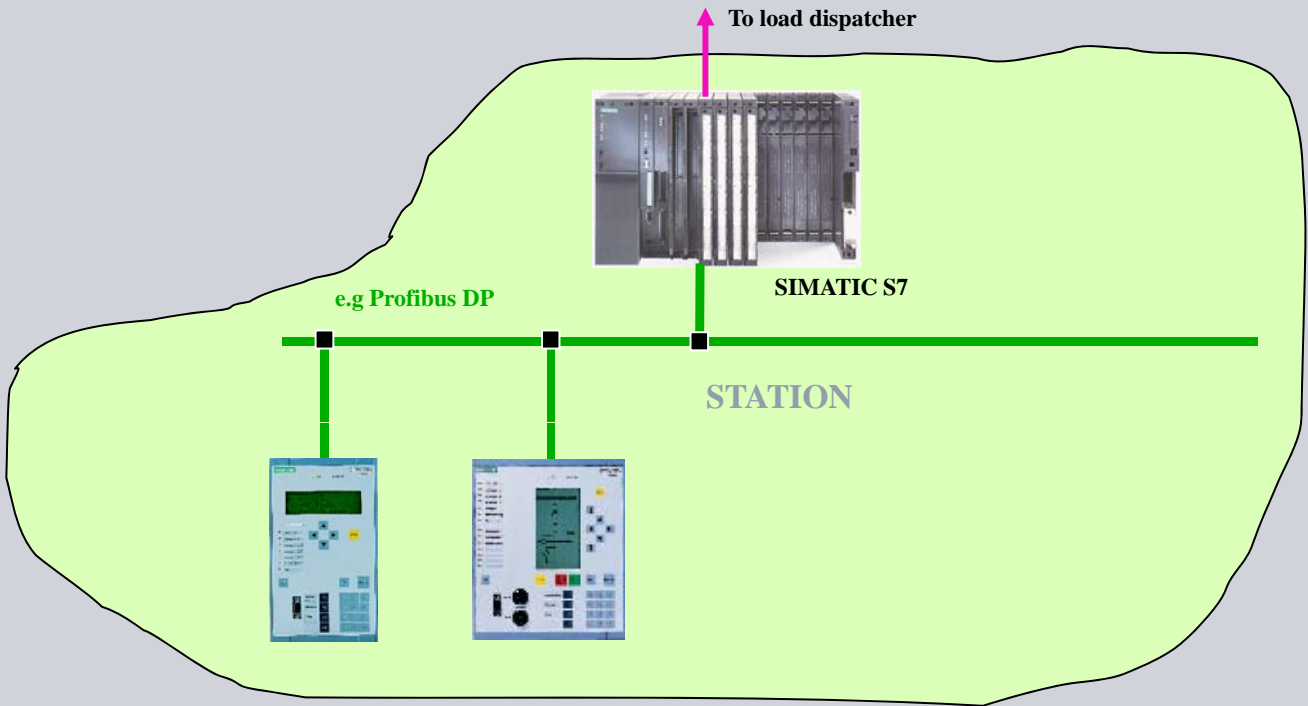




FMS Parameters on PC



Communication: Setup with additional protocols e.g. Profibus DP

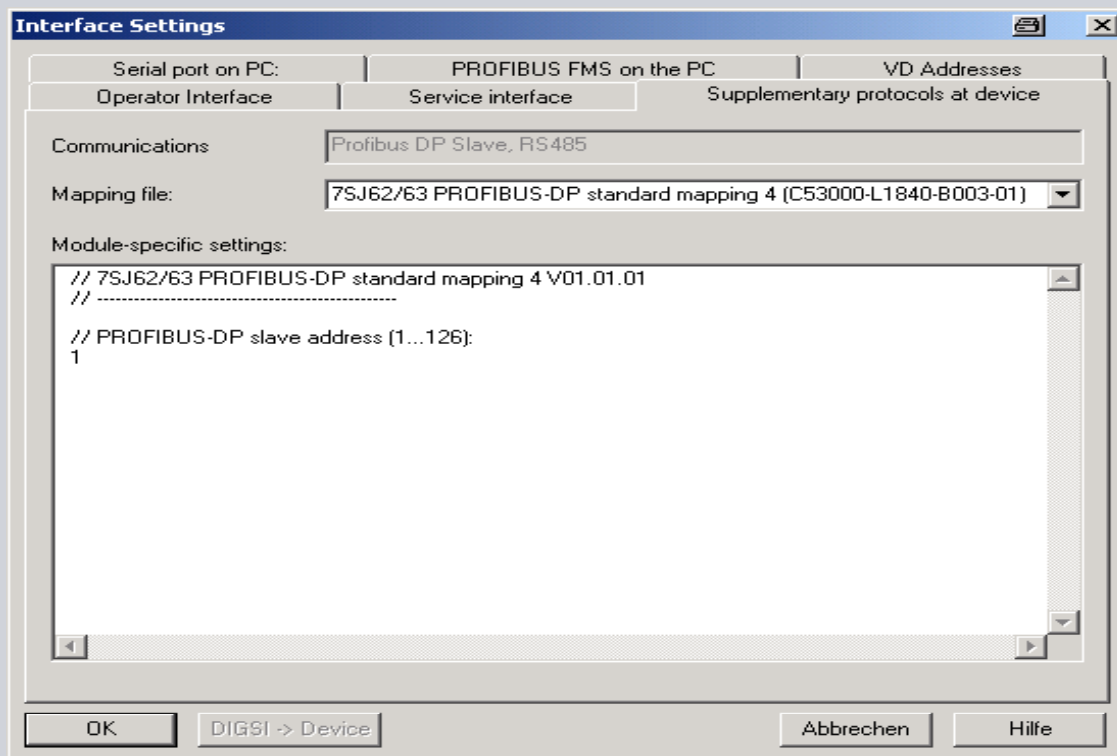


Additional protocols e.g. Profibus DP

The screenshot shows the "Properties - SIPROTEC device" window with the "Communications Modules" tab selected. It displays two ports: "11. SYSTEM-Port" and "12. Service Port". The "11. SYSTEM-Port" dropdown menu is open, showing "additional Protocols, see MLFB Ext. L" selected. An arrow points to this dropdown. Below the main window, an "Additional information" dialog box is open, showing two entries: "1. SYSTEM-Port" with "Protocol" selected in the dropdown, and "2. SYSTEM-Port" with "Profibus DP Slave, RS485" selected in the dropdown. Buttons for "OK", "Cancel", and "Help" are visible at the bottom of the main window and the dialog box.

Additional Protocols

Select the Mapping-file and Address



Additional Protocols e.g. Profibus DP

7SJ6-Standardmapping 3-1 bis 3-4

Output	7	7	8	3	Double commands
	29	29	24	5	Single commands
Input	7	7	8	3	Double annunciations
	146	114	64	26	Single annunciations
	25	10	21	8	Measurement values
	6	2	6	2	counter values
	2	1	1	0	value annunciations
	9	9	8	2	Bytes Output
	100	48	80	28	Bytes Input

The volume of the data-objects which are offered via Profibus-DP (Number of the Commands, Annunciations, Measuring values, Counter values in Output- resp. Input direction) is exclusively determined by the selection of a Standardmapping.

Marshalling of Informations

The screenshot shows the 'Settings - Masking I/O (Configuration Matrix)' window with a table of configurations. An arrow points to the 'Object properties - Overcurrent PU - OUT' dialog box, which is open for the 'Overcurrent PU' object.

Device	Number	Information	Display text:	L	Type	S	BO	LE	Buffer			Destination			CM	
									O	S	T	S	C	D	C	D
P.System Data 1									*			*	*			
Osc. Fault Rec.																
P.System Data 2																
	01761	Overcurrent PU														
	01791	Overcurrent TRIP														
	01704	>BLK Phase O/C														
	01721	>BLOCK I>>														
	01722	>BLOCK I>														
	01723	>BLOCK Ip														
	01751	O/C Phase OFF														
	01752	O/C Phase BLK														
	01753	O/C Phase ACT														
	01762	O/C Ph L1 PU														
	01763	O/C Ph L2 PU														
	01764	O/C Ph L3 PU														
	01800	I>> picked up														
	01805	I>> TRIP														
	01810	I> picked up														
	01815	I> TRIP														
	01820	Ip picked up														
	01825	Ip TRIP														
	01804	I>> Time Out														
	01814	I> Time Out														
	01824	Ip Time Out														

No.	Settings	Value
1	Byte offset	7
1	Bit mask	04(hex)

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Scaling of Measuring Values

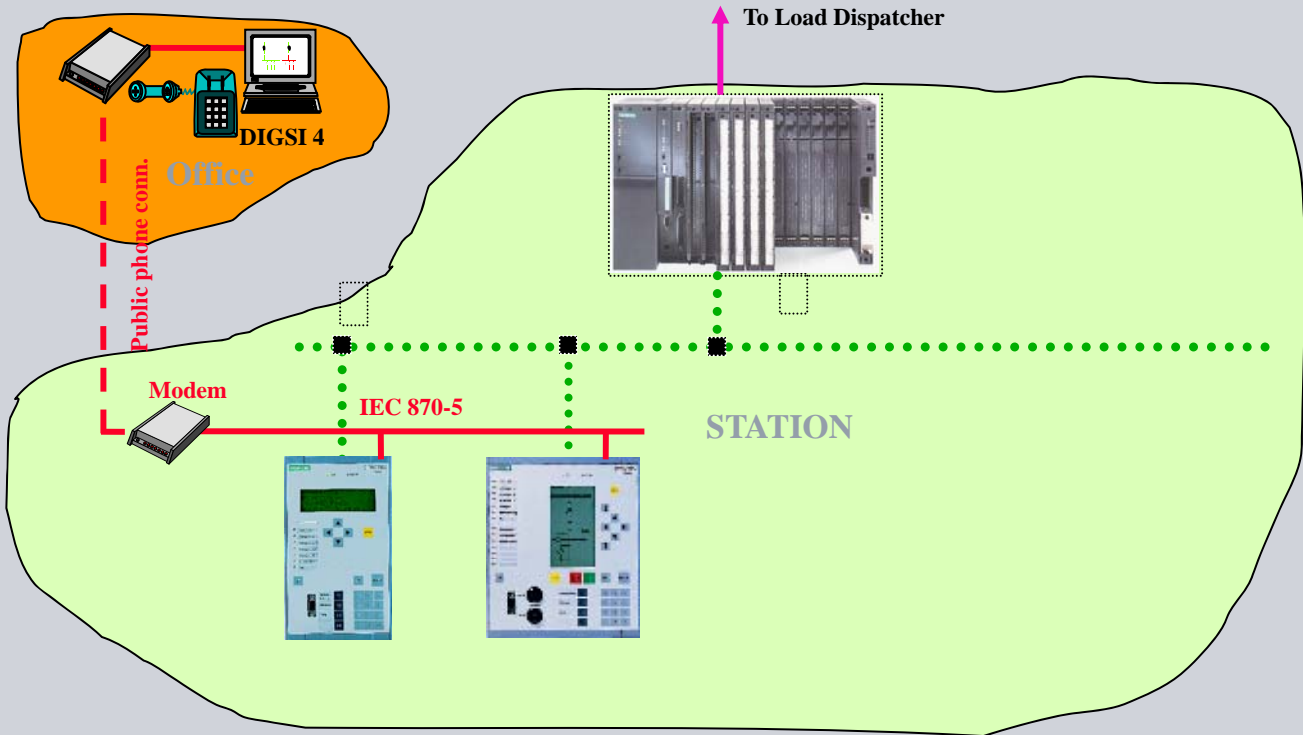
The screenshot shows the 'Settings - Masking I/O (Configuration Matrix)' window with a table of configurations. An arrow points to the 'Object properties - IL1 = - MV' dialog box, which is open for the 'IL1' object.

Device	Number	Information	Display text:	L	Type	S	Measured value window	Metered value window	D	
							S	C	C	D
P.System Data 1										
Osc. Fault Rec.										
P.System Data 2										
Overcurrent										
Directional O/C										
Measurement Superv										
Sens: E Fault										
Fault Locator										
Ctrl Authority										
Control Device										
Process Data										
	00601	IL1 =			MV					
	00602	IL2 =			MV					
	00603	IL3 =			MV					
	00604	IN =			MV					
	00605	I1 =			MV					
	00606	I2 =			MV					
	00931	3I0 =			MV					
	00621	UL1E=			MV					
	00622	UL2E=			MV					
	00623	UL3E=			MV					
	00624	UL12=			MV					
	00625	UL23=			MV					
	00626	UL31=			MV					
	00627	Uen =			MV					
	00629	U1 =			MV					
	00630	U2 =			MV					
Measurement	00641	P =			MV					

No.	Settings	Value
1	Scaling index	1
1	Zero offset	0.0
1	Scaling factor	10.0
1	Type	Primary value

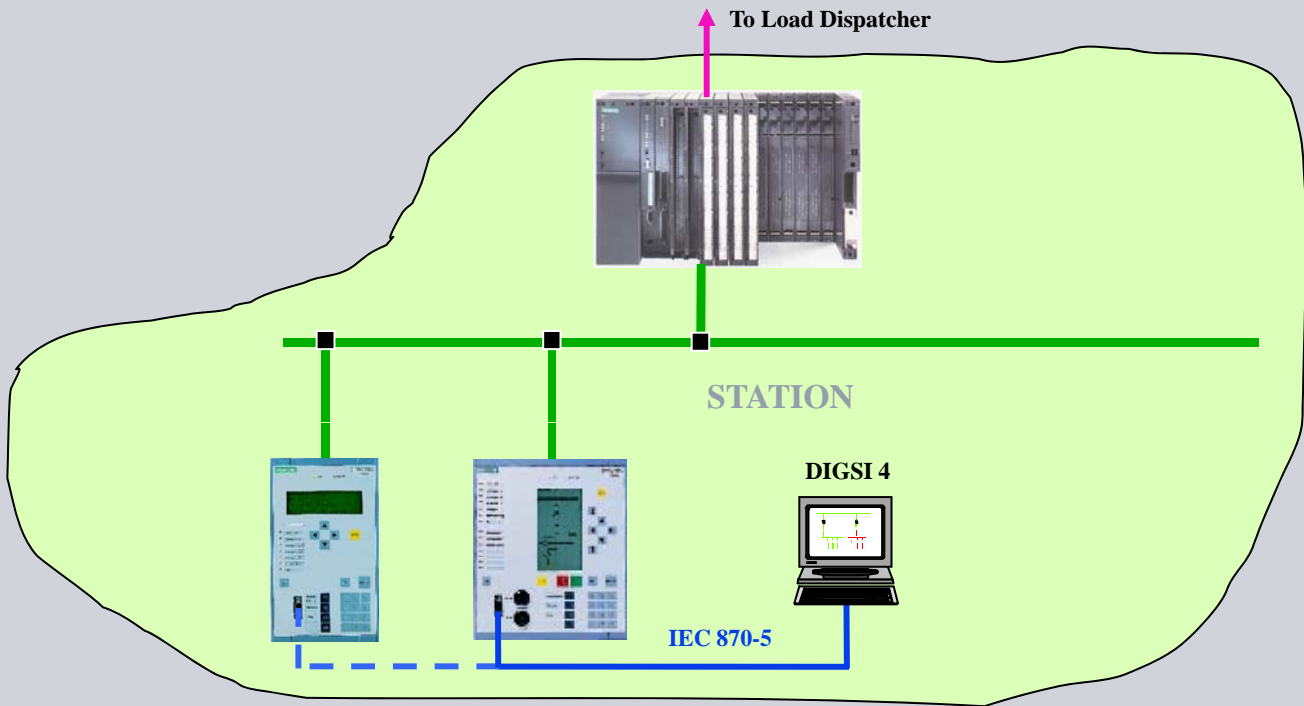
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Communication: Setup via Service Interface C



DIGSI 4 for Remote communication via Service Interface

Communication: Setup via Operator Interface



DIGSI 4 via Operator Interface