Instructions

I.S. Wizard

for

IS1+ field stations

Instructions I.S. Wizard

Content

1 Introduction

The software package ´I.S. Wizard´ offers a wide field of oppertunities to put IS1 Systems and field stations quickly and easily into operation and to maintain them.

The service bus allows to:

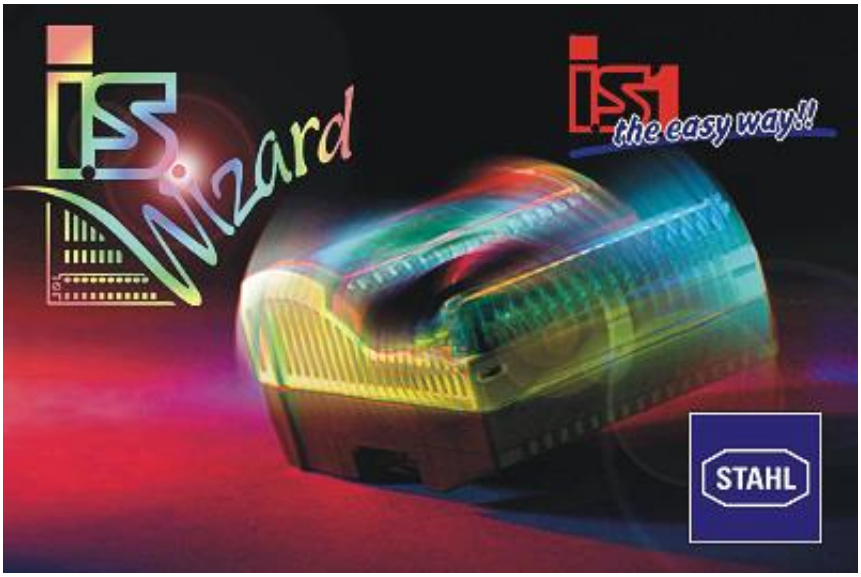
- configure field stations
- readback of configuration data
- parameterization of CPU & Power Module (CPM) and I/O Modules (IOM)
- read inputs, write outputs
- read and interprete diagnosis data for the three levels: field station, module, signal
- read information (e.g. module type, module revision, series number etc.)

The complete test of a field station as well as the sensors and actuators connected to the field station can be carried out without functioning field bus.
I.S. Wizard can be operated at the service bus at the same time with the field bus, too (reading access).

Using Modbus the IS1 System can be configured and parametrise via I.S. Wizard.

Using PROFIBUS the configuration and parametisation of IS1 fieldstations has to be done via the Profibus master. I.S. Wizard can be used optionaly for diagnosis and documentation.

I.S. Wizard can be integrated in the software of the automation system using ActiveX technology.



2 Installation

1. If you have installed a older revision of I.S. Wizard uninstall this revision first.

2. install the I.S. Wizard software executing ´SETUP.EXE´ on your CD.

3. Start I.S. Wizard and select the language ´german´ or ´english´ in the menu ´Extras´. If the language is changed, please exit I.S. Wizard and restart the Software again to enable all functions in the new language.

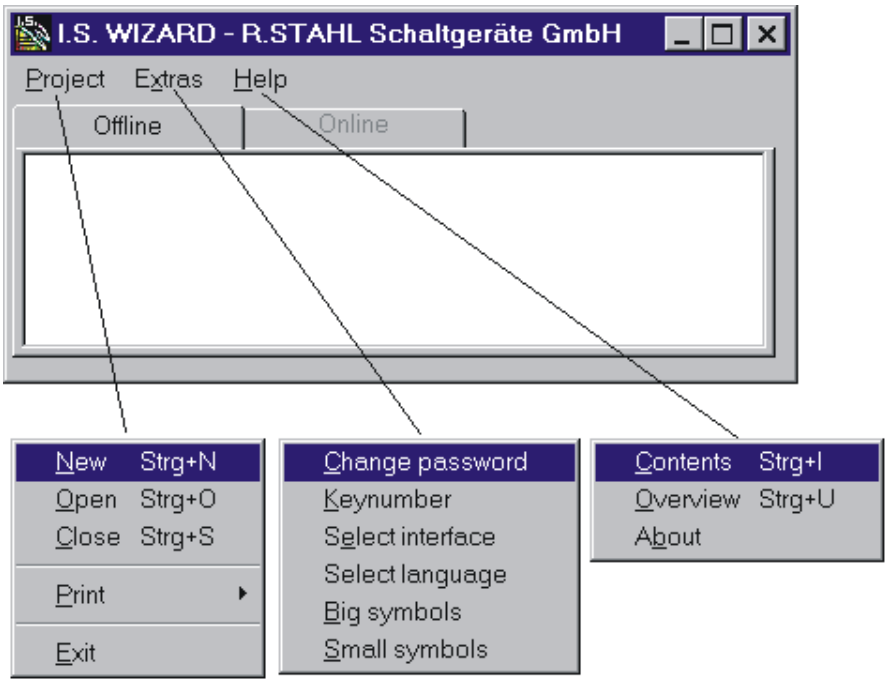
I.S. Wizard is ready to use now. The software is running as demo version and supports full functionality but with maximum 6 I/O modules.

To support bigger number of modules you need a licence which is delievered as Keynumber which can be entered in your existing software version to enable full functionality.

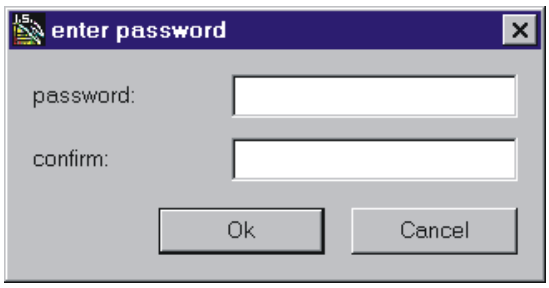
Please use online Help functions to get more informations about the program and it´s handling. Press F1 key to get specific informations of the actual window of I.S. Wizard.

3 I.S. Wizard Main Window

3.1 Menue functions in the main window



3.1.1 Enter Password



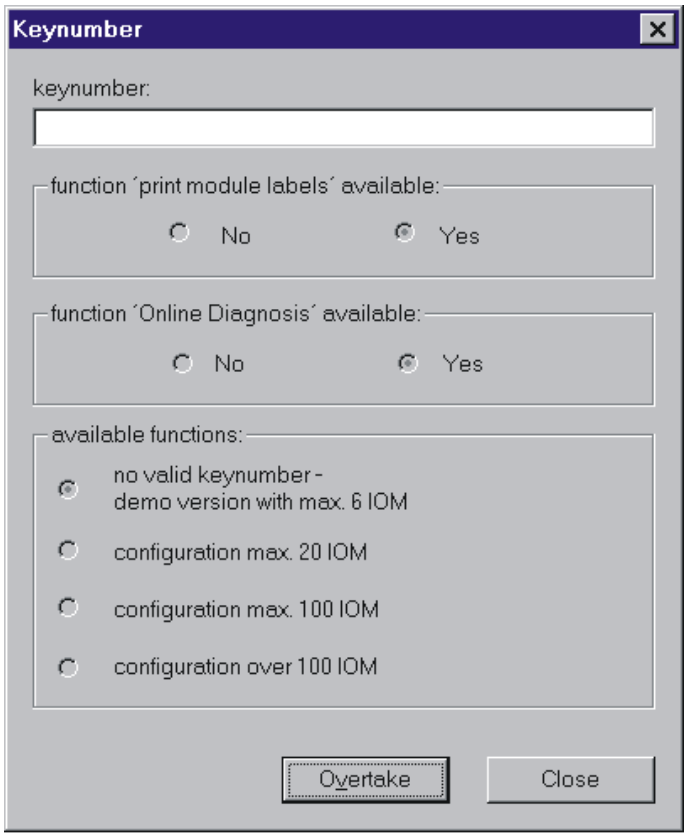
The access to the following functions in I.S. Wizard can be protected by a password:
- all accesses in writing on the project date base
- writing functions to the field station (configuration, parameter, output data).

In case that a project, which is protected by a password, is opened with no or a wrong password, the project data can only be read, but not changed. The diagnosis functions are accessible online.

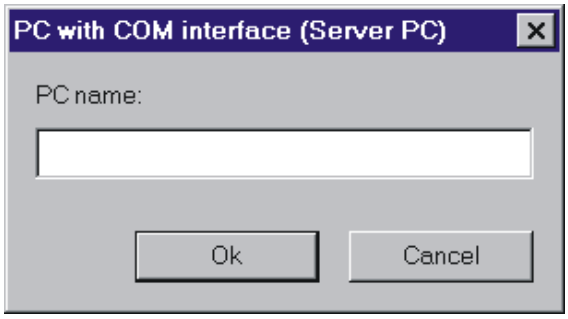
In case that no password should be use, the acknowledgement with OK is possible by means of empty spaces. The password can be changed subsequently in the menu ´Extras´ -> ´change password´
Pay attention to small / capital letters!

3.1.2 Enter Keynumber

After installation of I.S. Wizard a valid Keynumber has to be entered.
Without valid Keynumber the software is working as Demo Version which allows all functions but with a limitation of maximum 6 IOM.



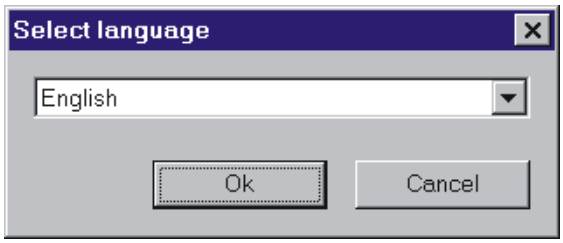
3.1.3 Select Interface



Local installation without network:
After installation of I.S. Wizard on a PC the software is working local on this PC using the COM ports of this PC to communicate with the IS1 service bus. The field ´PC name´ in the window above has to be empty.

Network operation
Using a PC network the name of the PC (or it´s IP-address), on which the OPC server is installed which has access to the service bus, can be entered. This information is stored localy in the registry of the PC and is therefore a fixed setting of a PC and not project specific.
For configuration of such a network deep knowledge of DCOM and the required network configuration is necessary.

3.1.4 Select language

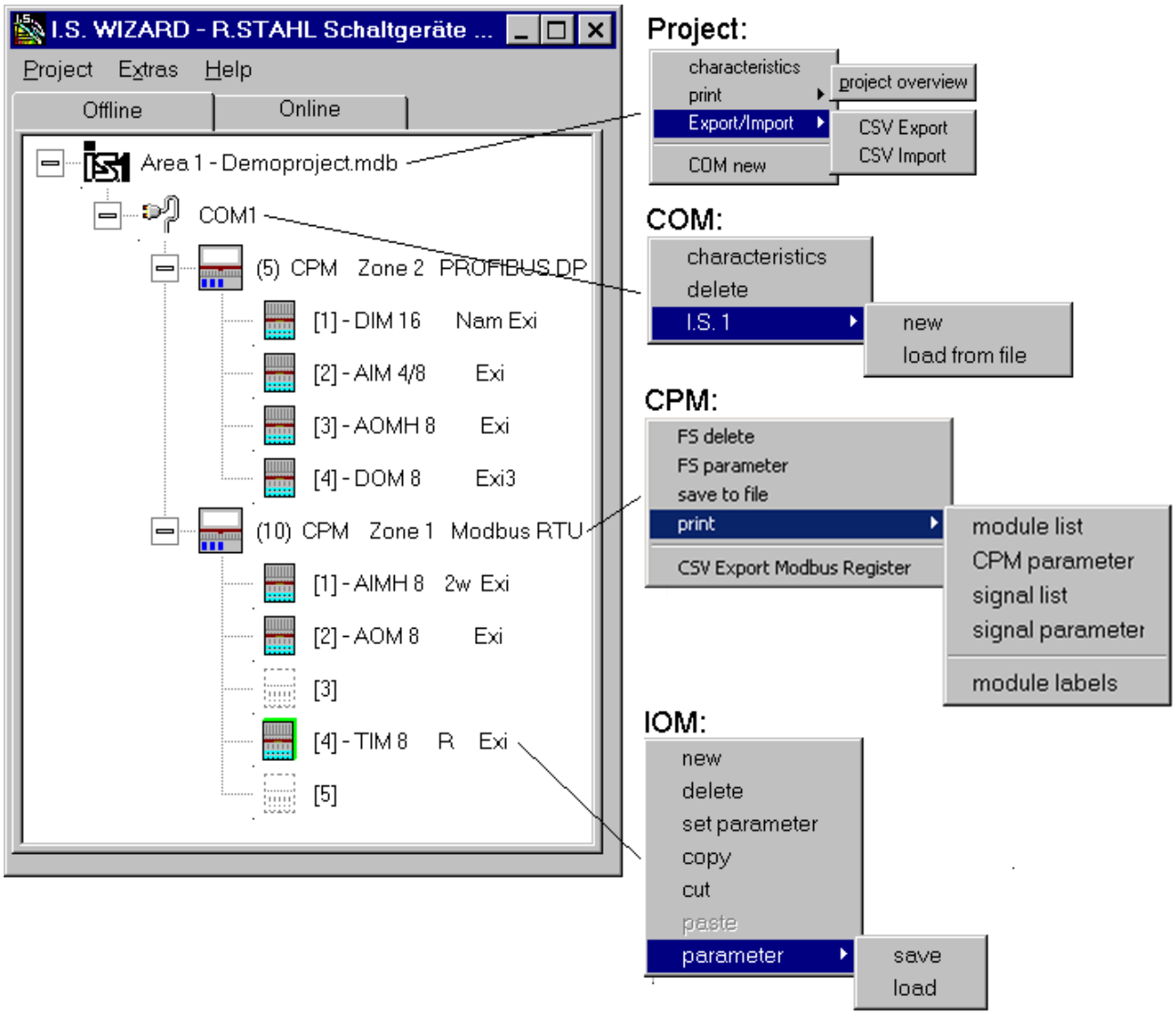


The language of screen texts of I.S. Wizard can be switched.
In the select box above one of the available languages can be selected.

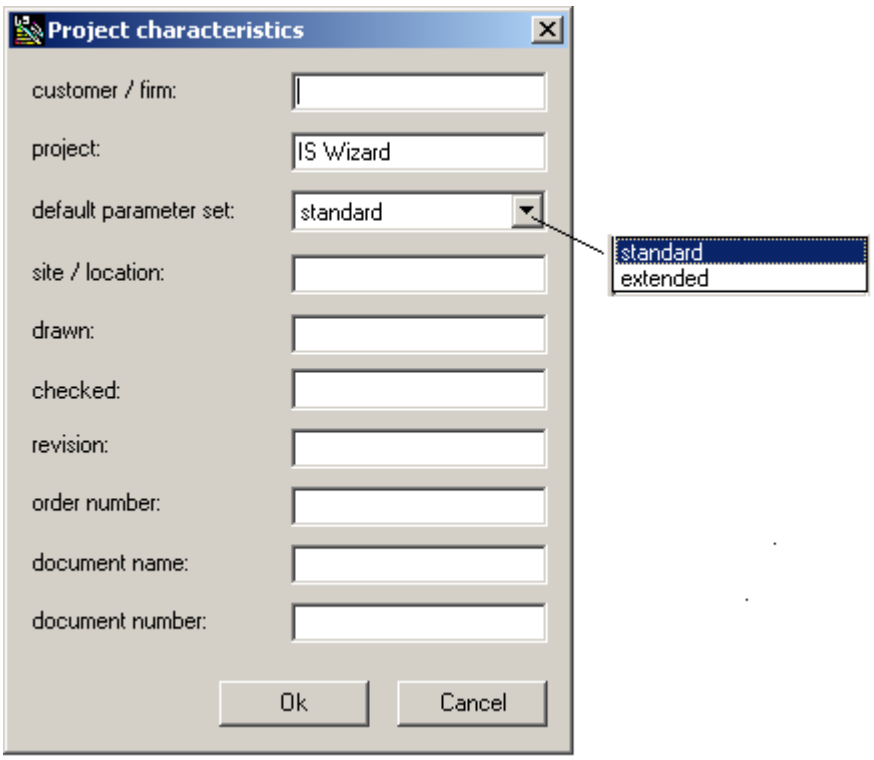
Some windows of I.S. Wizard change the language online after a changed selection.
Other windows require a new start of I.S. Wizard to accept the change.

4 Offline - Menue functions in project tree

With right mouse button on objects in project tree:



4.1 Project – characteristics

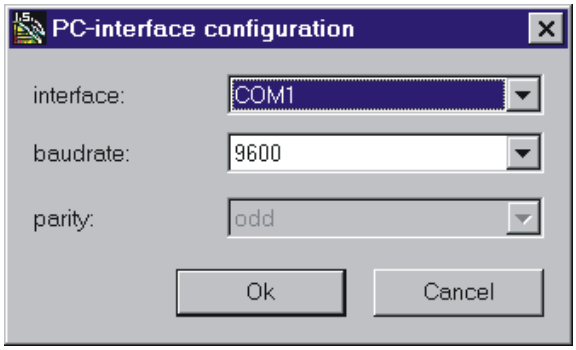


The informations of this screenmask are used for project documentation and are stored in the project database of I.S. Wizard. This data is not transmitted to the fieldstations.

Default Parameterset:

A default for the parameterset of IS1 fieldstations (standard or extended) can be defined for the actual project in I.S.Wizard.
At offline configuration this default is used for the new configured fieldstations.

4.2 COM characteristics



Here the COM port can be selected, which is used for connection of the IS1 servicebus to the PC.
The baudrate has to be set to 9600 Baud. Other baudrates are not allowed at the moment.

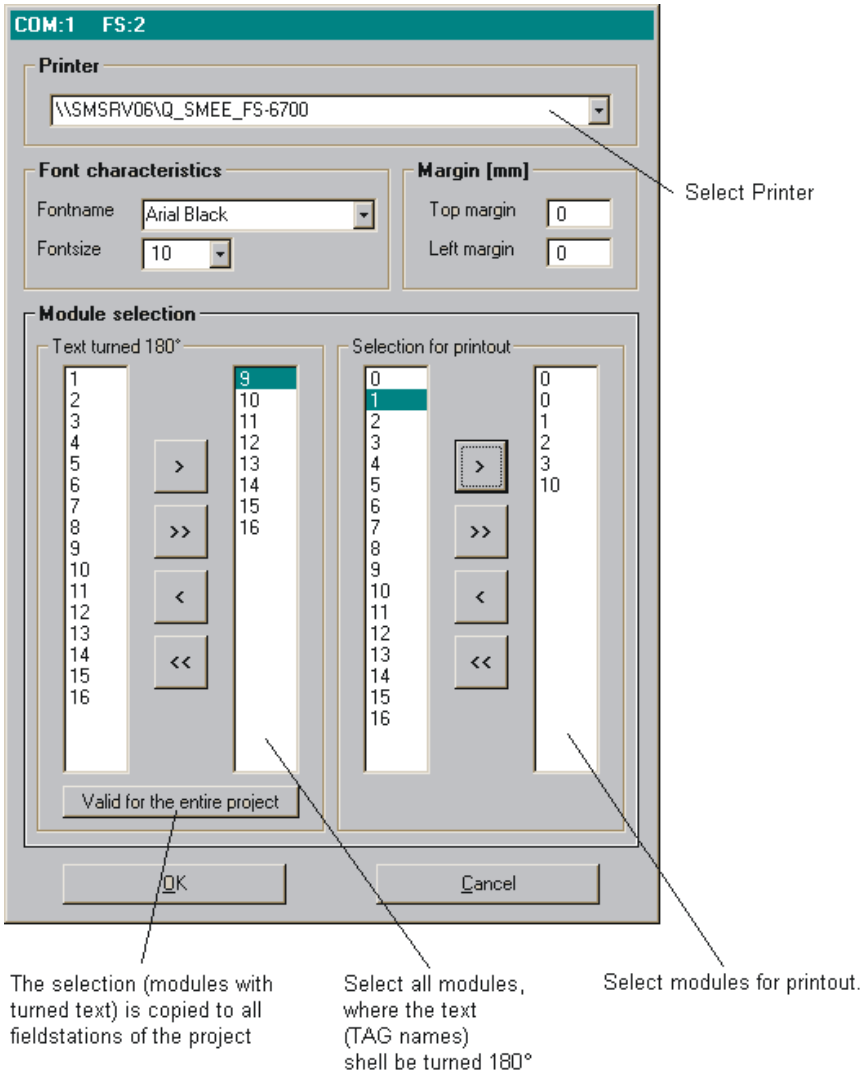
The 9440 CPM is using a RS485 interface for the service bus. Therefore a RS485 to RS232 converter between CPM and PC has to be used.
For Zone 1 CPM (9440/21-01-x1) a fieldbus isolation repeater type 9185 has to be used.
For Zone 2 CPU (9442/35-10-00) is using an USB interface for the ServiceBus. Therefor a FTDI USB-Null-Modem Cabel between CPU and PC has to be used.
Alternatively, the Ethernet (RJ45) interface together with the IS1 DTM can be used.

When replacing a CPM 9440/15 with ServiceBus connection through the Zone 2 CPU 9442/35-10-00, a USB RS485 Converter 9787 is required to enable the desired RS485 interface.

4.3 Print Functions

The following print functions are available. A preview function allows sreen display of the print reports without sending directly to the printer. Output to other file formats (Word, Excel ...) is available too.

Project overview::	List of all fieldstations of the project
Plugged Modules:	List of all plugged modules of the fieldstation
Configured Modules:	List of all configured modules of the fieldstation *1)
CPM parameter:	List of all CPM parameters of the fieldstation
Signals :	List of all signals of the fieldstation
Signal parameter:	List of all modul- and signal parameters of the fieldstation
Module labels:	Printout of all module labels of the fieldstation including TAG names.



For the function ´Print module labels´ settings for font and margin can be made in the screenmask above.
Perforated leaves are available, where the module labels can easily be separated after printout.

For exact positioning the margins have to be adjusted printer specific (Default value = 0)
According to the installation situation of the modules in the cabinet the text of the TAG names can be turned 180° to improve the legibility.

Hint for type numbers of IS1+ IOM:
After offline configuration of IS1+ IOM the type numbers show ´xx´ wildcards for the selected module group (e. g. 9468/3x-08-xx) in display and printout. During online readback of configuration data from IS1 (transmit

configuration from IS1 or generate configuration data according hardware) the type numbers of all real existing modules of the IS1 Field Station are transmitted, stored in the project database and displayed afterwords in offline mode too.

*1) The columns ´Ser.-No.´, ´HW-Rev.´ and ´FW-Rev.´ in the List ´Configured Modules´ are only filled if configured and plugged module type of each slot match.

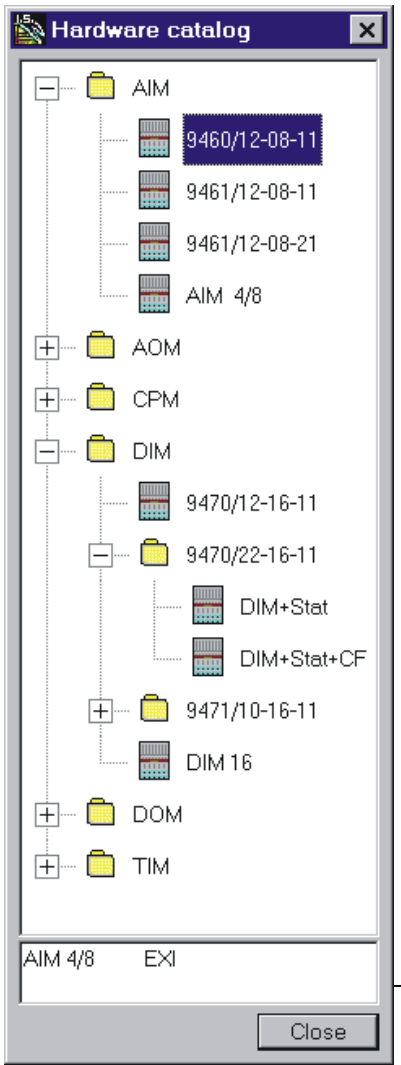
These celles of a slot remain empty in following cases:
- No module plugged or no response from module.
- Wrong module type plugged (plugged unequal configured).
- Compatible module type plugged (plugged unequal configured).

4.4 Hardware Catalog

Über die Funktion ´IS1 Neu´ (rechte Maus auf COM Symbol) öffnet das Fenster Hardwarekatalog.

The hardware catalogue contains all module types of the IS1 System.
It is possible to pull modules in an offline configuration to empty slots of the project tree by means of Drag & Drop.

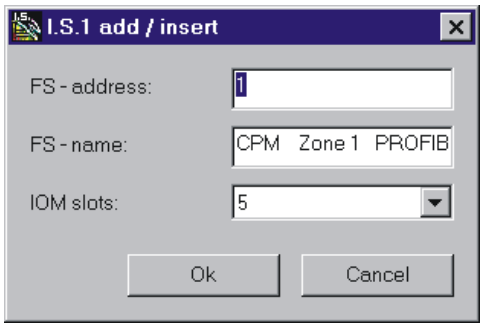
In this case, the selected module is stored in the project data base and all module parameters are set to default values.



4.5 IS1 add / insert

A new IS1 fieldstation can be generated in the project file of I.S. Wizard using ´Drag and Drop´ function on the CPM symbol in the hardware catalog and moving the symbol to the COM port in the project tree.

The following window opens:



FS - address:

Address of the Fieldstation (on service bus and automation bus). The address can be entered on the CPM via the menu system on the display of the CPM.

For the CPU 9442/35-10-00 the address of the Fieldstation and the service bus address is set via rotary switches S2 an S3 on the socket 9496/35 (USB Service bus address = automation bus)

FS - name:

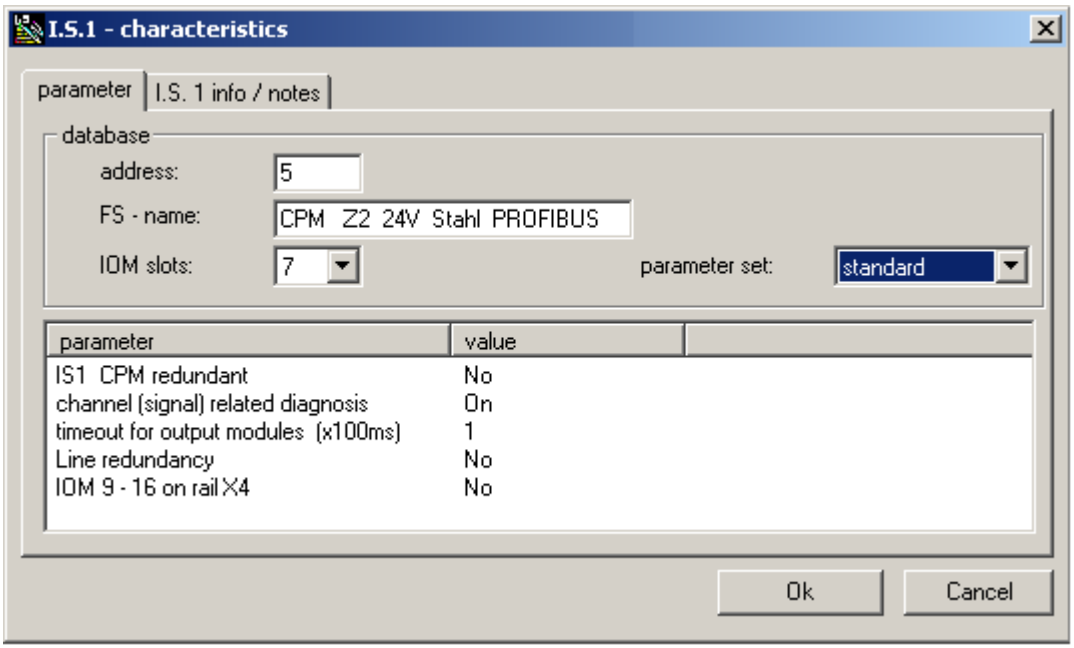
A default name of the fieldstastion is generated which can be modified individually. The name is used for documentation in I.S. Wizard.

IOM slots:

The field station will be generated with the adjusted number of empty slots for IOM, in order to optimize the screen picture. The number of slots can also be modified later.

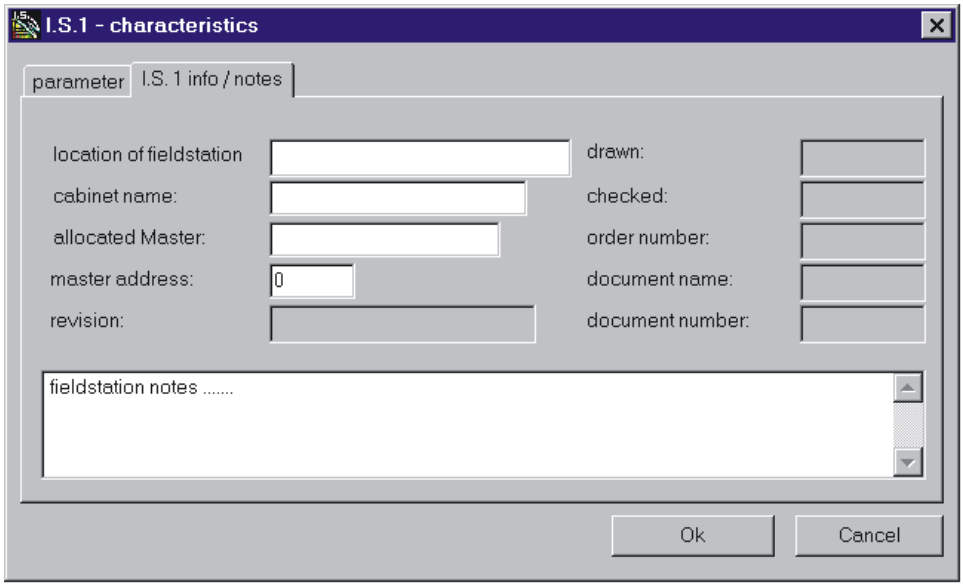
After pressing the OK button the IS1 fieldstation is registered in the project database with the parameter set selected in Project – characteristics and is displayed in the project tree in I.S.Wizard.

4.6 IS1 Characteristics - CPM Parameter



Example: CPM Parameter at PROFIBUS DP

CPM global parameters are indicated or changed here.
When double-clicking on a line at the parameter, a window opens for indication or changing the parameter.



Information for documentation of the field station as well as for the associated masters at the AS bus can be entered here.

4.6.1 Selection of standard- / extended parameter set

In the window ´IS1 Characteristics -> CPM Parameter´ the used parameter set of a IS1 fieldstation can be selected during offline configuration.

Selection:

Parameter set	Function	availability / conditions
standard	particulary modul global parameters	All revisions of IS1 Remote I/O-Systems **GSD:** Revisions V1.xx
extended	predominant ´signalspecific parameters´ Support of communication of HART variables to AS Details see operating instructions ´Extended parameter set for IS1 Remote I/O systems´	**CPM hardware conditions:** CPM 9440/12-01-11 (24V Z1) from revision F CPM 9440/15-01-11 (24V Z2) from revision F CPM 9440/22-01-21 (230V Z1) all revisions **CPM Software conditions:** PROFIBUS from FW-Rev. 01-32 or 02-32 MODBUS from FW-Rev. 11-06 **IOM:** from FW-Rev. 02-xx **I.S. Wizard:** from Revision 3.0.0 **GSD:** from Revision V2.00

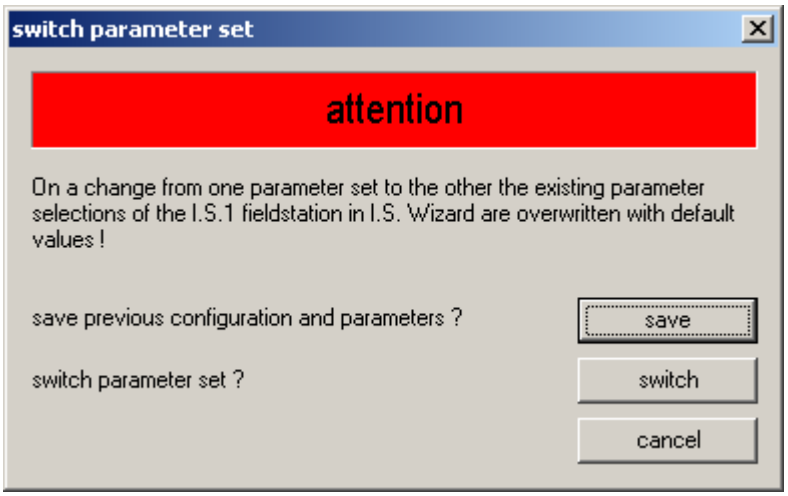
Using Profibus DP the configuration and parametrisation of IS1 fieldstations is done in the configurator of the PROFIBUS DP Master using GSD files. If I.S.Wizard is used in such applications the configuration, the selected parameter set and parameter data are automatically transmitted from the IS1 fieldstation to I.S.Wizard and are displayed in I.S.Wizard (see Transmit Configuration from IS1). Parameter and configuration changes have to be made in the configurator of the DP master.

4.6.2 Switching / Change of parameter set:

The two parameter sets ´Standard´ und ´Extended´ can not be mapped to each other. On a change from one parameter set to the other the existing parameter selections can not be adopted. Only the configuration of the modules remains unchanged. In the project database of I.S.Wizard only one parameter set exists.

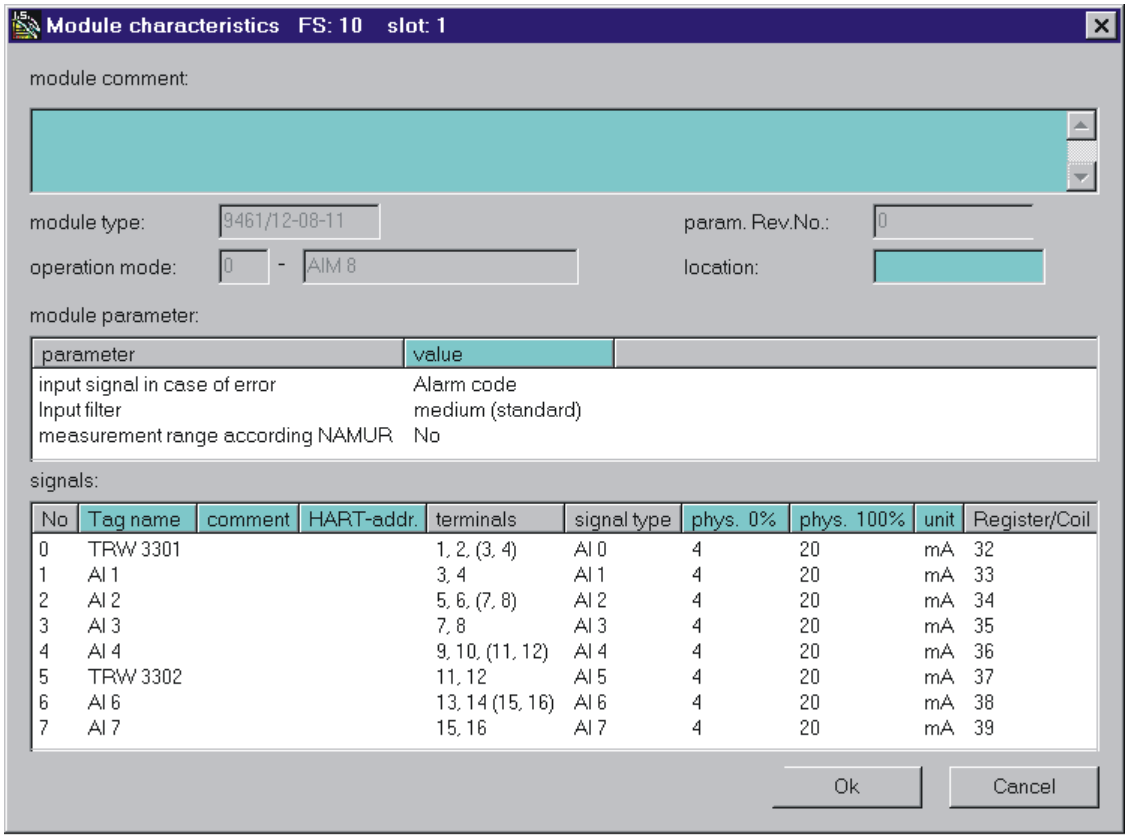
If the parameter set is switched over in I.S.Wizard, the parameters in the project file will be overwritten with default values of the new selected parameter set. Previous used parameter selections will be lost at switch over.
If previous parameter selections of a IS1 fieldstation shell be used later, a backup of the project file of I.S.Wizard has to be made before switching the parameter set. Alternatively the configuration and parameter data of one IS1 fieldstation can be stored in a separate file with the function ´ CPM: save to file´.

The change of the parameter set is an aggravating system change with possible aggravating changes in the system behaviour. Therefore the following dialog is displayed if the parameter set is switched:



After a switch over of the parameter set all parameter values required different from default value must be set and must be transmitted to the IS1 fieldstation with the online function ´Transmit Configuration to IS1´.

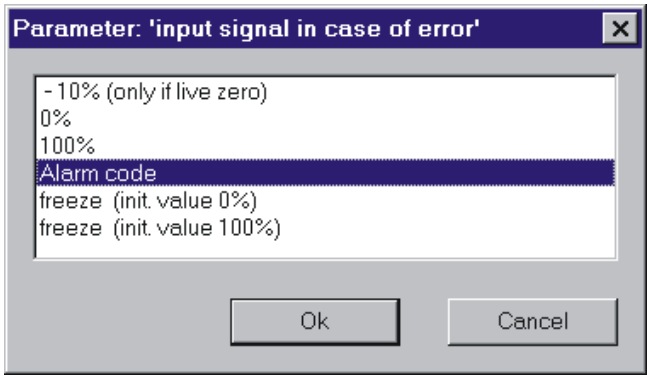
4.7 Module Characteristics - IOM Parameter



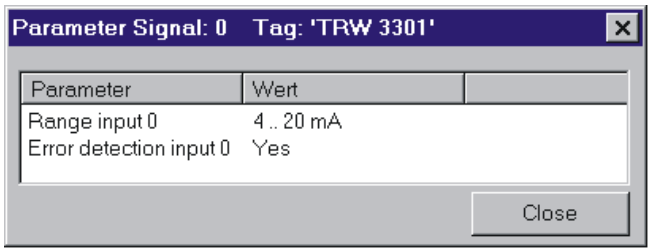
The blue marked field in the screen mask above can be edited.

The column ´Reg/Coil´ shows the register or coil address of the signal in CPM with MODBUS protocol.

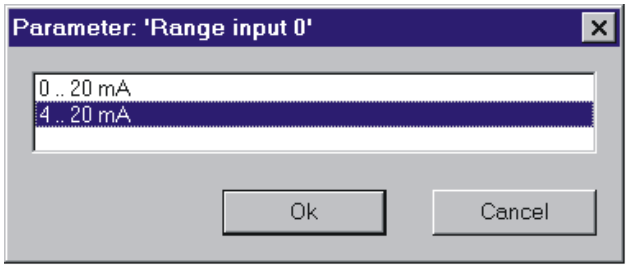
When double-clicking on a line in the area **module parameter**, a window opens for the input of the parameter or parameter selection:



When double-clicking on a line in the area **signals** in a column containing no editable cells (e.g. No.), a window opens showing the signal parameters:



When double-clicking on a **signal parameter**, a window opens for the parameterization or parameter selection.



4.8 Import / Export

4.8.1 Import of signal information in I.S. Wizard

Data files in CSV format (comma separated values) with the following structure can be imported:

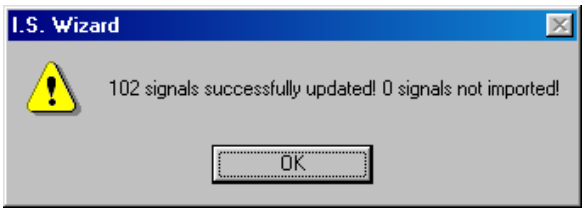
Address				Data						
COM	Addr	Modul	Signal	SignalTag	SignalNote	Phys0%	Phys100%	EUUnit	HartAdr	<-- column names
int	int	int	int	char	char	float	float	char	Char	<-- signal data
.	.	.	.	.	.	.	.	.	.	<-- signal data

Example:

```
COM,Addr,Modul,Signal,SignalTag,SignalNote,Phys0%,Phys100%,EUUnit,HartAdr
1,6,1,0,"DI 0",,0,100.9,"%",""
1,6,1,1,"DI 1",,0,100.9,"%",""
1,6,1,2,"DI 2",,0,0,"",""
```

At the import it is presupposed that a signal, for which data should be imported, already is available in the project data base. The parameters of CPM and IOM are not changed. The import function is available only for project files, which have been generated with I.S.Wizard Revision 2.2.4 or later.
The import program is searching for each line of the import file for the address of the signal (COM, Addr, modul, signal) in the project database.
If the signal is found, so the pertinent data is written to the project file. The columns are associated according to the column names.
If not all data columns are available in the import file, so the data from the existing columns is taken over.
For not existing columns nothing is changed in the project file.
If the signal from the import file is not found in the project database, the data of this signal will be written to a error log file (*.err), to be able to recognize, which data not were taken over.

The import function will be finished with the following message:



The following separator characters are automatically accepted from the import function:

Field separator	Decimal separator	Text marker	CSV format
´,´ (comma)	´.´ (dot)	“character “ (inverted commas)	English
´;´ (semicolon)	´,´ (comma)	“character “ (inverted commas)	German

Import in EXCEL:

With a double click on a CSV file in WINDOWS Explorer, EXCEL will be started and the file will be imported using the English CSV format. If Excel is started first and the file is opened via the menue ´File -> Open´, Excel is using the separators which are defined in the Windows System settings (Settings -> System settings -> Country settings -> Numbers).

4.8.2 Export of signal information from I.S. Wizard

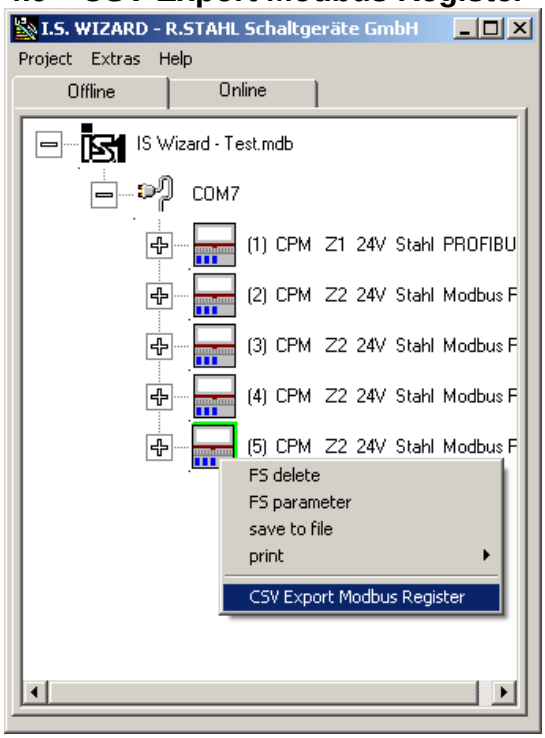
Per menue command a list according to above mentioned structure for the entire project will be written to a file in CSV format.

The following separator characters are used for the export function:

Field separator	**Decimal separator**	**Text marker**
´,´ (comma)	´.´ (dot)	“character “ (inverted commas)

The export function will be finished with the following message:

4.9 CSV Export Modbus Register

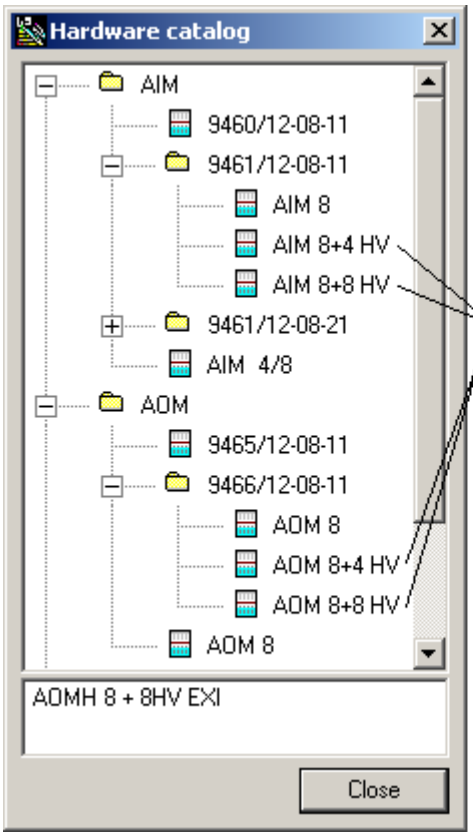


By using „CSV Export Modbus Register“, the signals of all modules from the selected field station are written to a CSV file.

	Standartblocking by IN/OUT data				Extrablocking by signaltype						
Slot	Signaltype	Tagname	IN_Reg	IN_Coil	OUT_Reg	OUT_Coil	AI_Reg	HV_Reg	DI_Reg	AO_Reg	DO_Reg	Modultype	SignalNote
1	DI_0	DI_0	32	497					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_1	DI_1	32	498					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_2	DI_2	32	499					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_3	DI_3	32	500					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_4	DI_4	32	501					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_5	DI_5	32	502					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_6	DI_6	32	503					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_7	DI_7	32	504					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_8	DI_8	32	505					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_9	DI_9	32	506					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_10	DI_10	32	507					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_11	DI_11	32	508					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_12	DI_12	32	509					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_13	DI_13	32	510					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_14	DI_14	32	511					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	DI_15	DI_15	32	512					4001			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S0	Status_S0	33	513					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S1	Status_S1	33	514					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S2	Status_S2	33	515					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S3	Status_S3	33	516					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S4	Status_S4	33	517					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S5	Status_S5	33	518					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S6	Status_S6	33	519					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S7	Status_S7	33	520					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S8	Status_S8	33	521					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S9	Status_S9	33	522					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S10	Status_S10	33	523					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S11	Status_S11	33	524					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S12	Status_S12	33	525					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S13	Status_S13	33	526					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S14	Status_S14	33	527					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	Status_S15	Status_S15	33	528					4002			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	AI15_Zaehler/Frequenz	AI15_Zaehler/Frequenz	34						4003			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	AI14_Zaehler/Frequenz	AI14_Zaehler/Frequenz	35						4004			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	AI13_Zaehler/Frequenz	AI13_Zaehler/Frequenz	36						4005			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	AI12_Zaehler/Frequenz	AI12_Zaehler/Frequenz	37						4006			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	AI11_Zaehler/Frequenz	AI11_Zaehler/Frequenz	38						4007			9470/3x-16-xx 16 DI / 16 DO + 6CF	
1	AI10_Zaehler/Frequenz	AI10_Zaehler/Frequenz	39						4008			9470/3x-16-xx 16 DI / 16 DO + 6CF	

4.10 HART variables - parameterization

In addition to the analogue process value, HART field devices offer the option of digitally reading up to four process variables (HART variables HV) from the transmitter. IS1 offers the option of mapping such HART variables to the cyclic data area of PROFIBUS DP or to MODBUS registers using the **extended Parameter set** of IS1.
Optionally no HART variables, four or eight HART variables of an IS1 HART module (AIMH, AOMH) can be transmitted in addition to the cyclic data.
This can be selected optionally when configuring a field station via GSD file or via I.S.Wizard.
(Details see ´ Operating Instructions extended parameter set for IS1 Remote I/O System´).



Attention !
Configuration of HART modules with HART variables (HV) is allowed only using the extended parameter set.
Do not use this modules with standard parameter set.

4.10.1 Data format

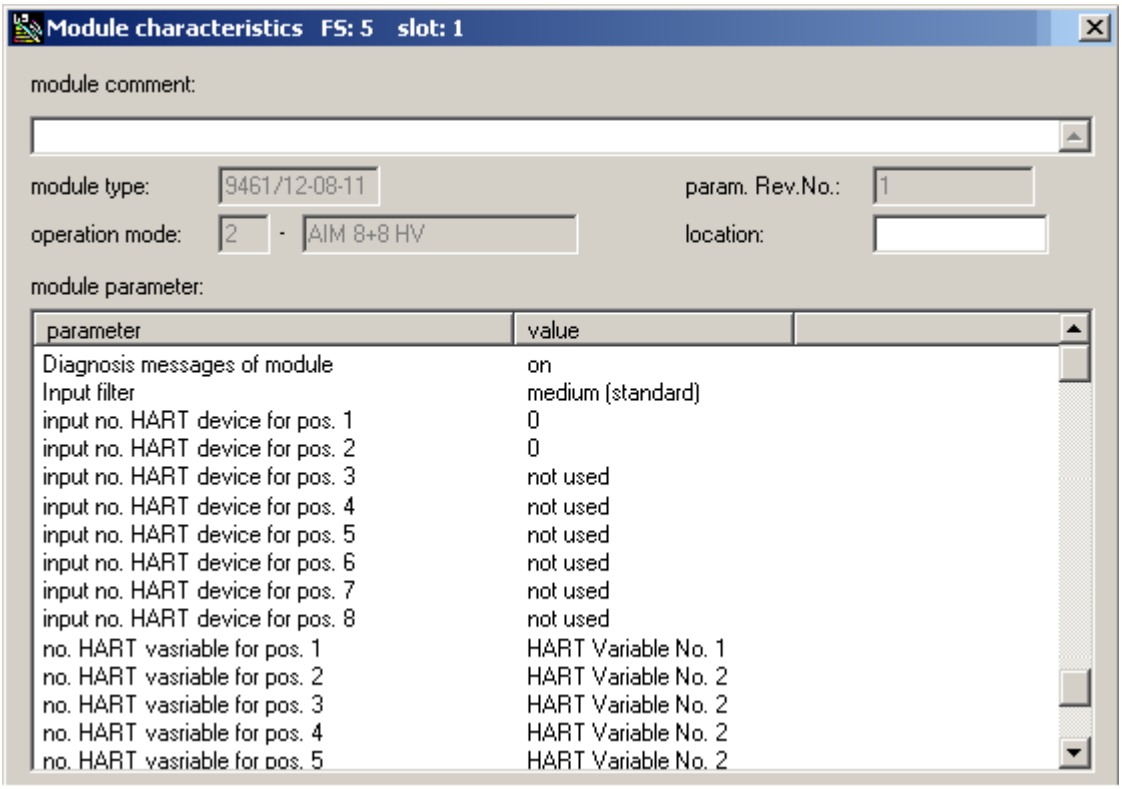
HART variables are transmitted as IEEE floating-point numbers (4 Byte).
If a HART variable cannot be read (e.g. HART device undergoing startup, not connected, defective or HART variable not found, …) value 7F A0 00 00 (Not a Number) is transmitted. This is displayed in the online diagnosis of I.S.Wizard as ´1.#R´. The value ´Not a number´ may be evaluated in the AS for generation of signal status of the HART variables. Detailed status and diagnostic information of the HART field devices can be evaluated via HART Management Systems.

4.10.2 Selection of HART variables

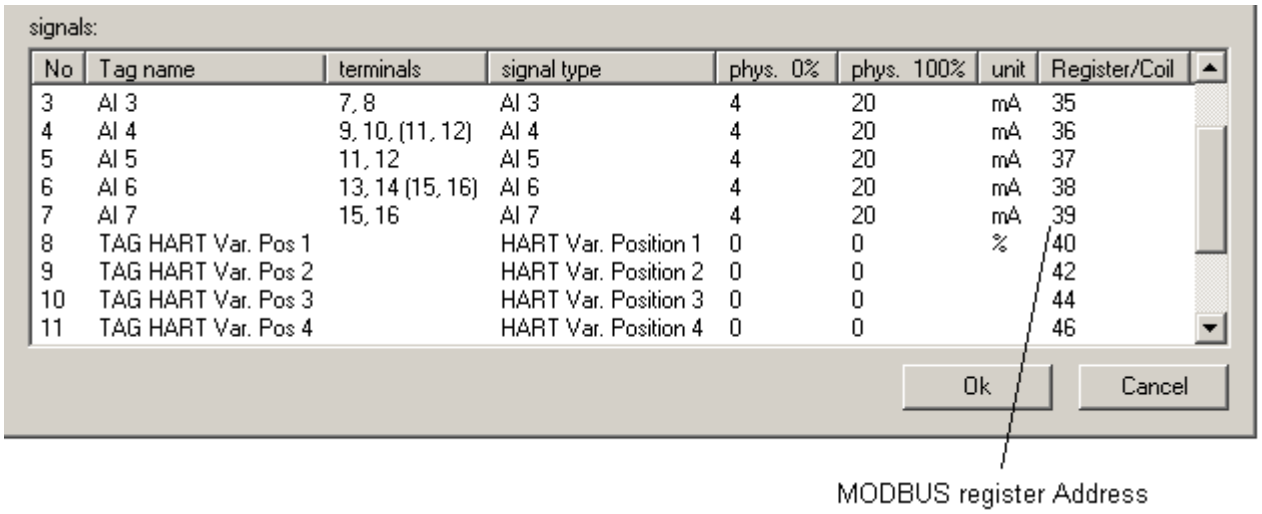
Up to 8 HART field devices can be connected to one HART module of IS1. Since each HART field device may have up to 4 variables, this mean that a maximum of 32 HART variables are possible per module.
The assignment of 4 or 8 out of these 32 variables to the positions in the cyclic transmission area of PROFIBUS DP or to MODBUS Registers can be selected by parameter assignment:

Parameter name	Value range	Function
Input No. HART device for pos. 1	0 ... 7, Not used	Selection of the channel No. (input / output No.) of the HART module to which the HART field device is connected which is to be transmitted at pos. 1. If ´Not Used´ is selected, value ´Not a Number´ (7F A0 00 00) is transmitted.
Input No. HART device for pos. 2	0 ... 7, Not used	Selection for pos. 2
. . . . .		
Input No. HART device for pos. 4 (8)	0 ... 7, Not used	Selection for pos. 4 (8)
No. HART variable for pos. 1	1 ... 4	Selection of the variables of the HART field device which is to be transmitted at pos. 1.
No. HART variable for pos. 2	1 ... 4	Selection for pos. 2
. . . . .		
No. HART variable for pos. 4 (8)	1 ... 4	Selection for pos. 4 (8)

Example 1: The variables 1 and 2 of a HART device connected to input 0 of a IS1 HART Module are transmitted on position 1 and 2.

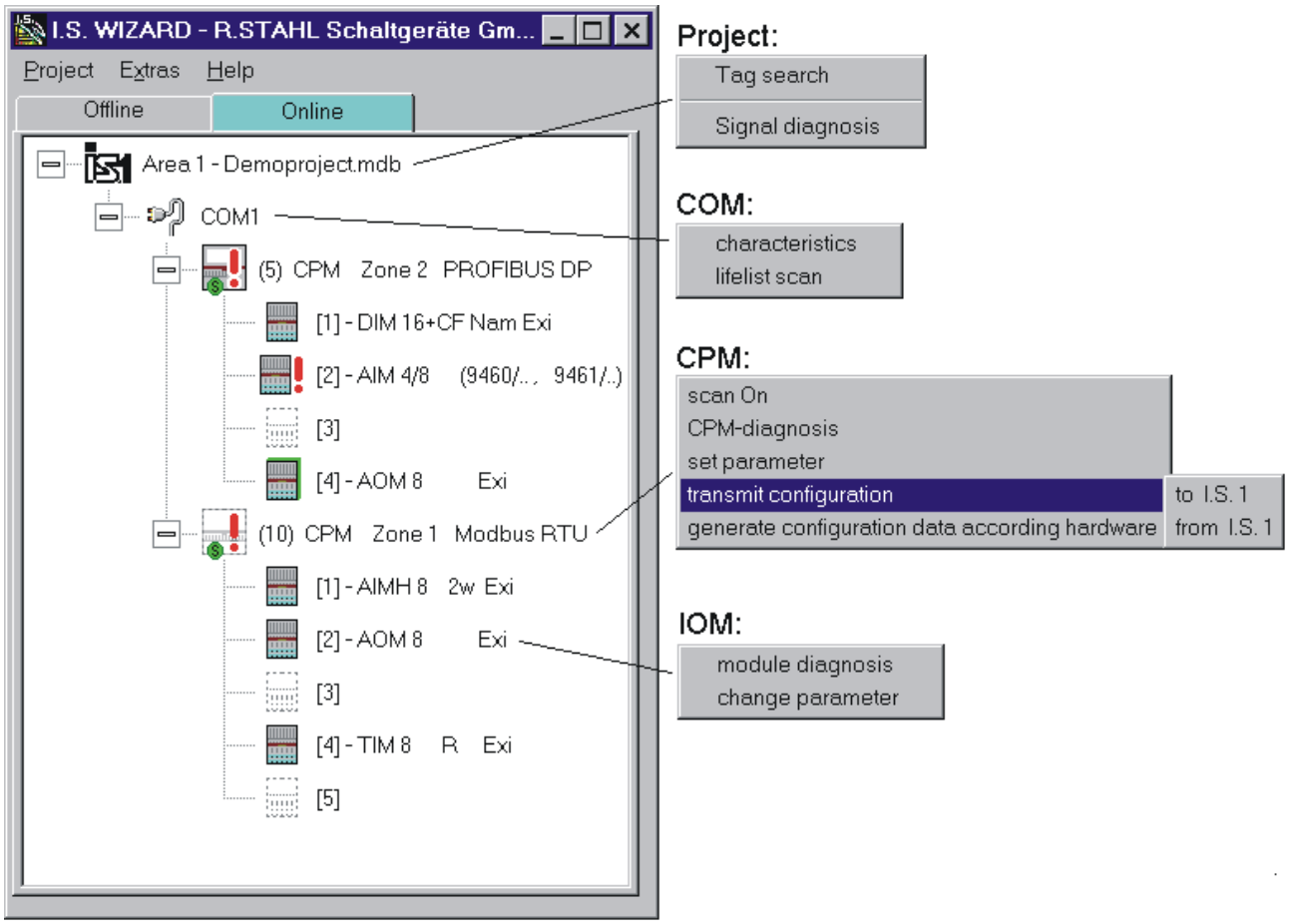


Example 2: Allocation of HART variables to MODBUS register addresses



Online – Menue Functions in Project Tree

With right mouse button on objects in project tree:



4.11 Scan On / Off

The cyclic update of diagnosis data in the online tree (red exclamation point) can be switched On or Off for each fieldstation.

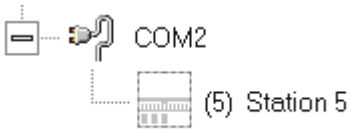
The default value is ´On´ which is marked with a `S´ in a green circle on the CPM icons.

If many fieldstations are used on one COM Port (on one service bus), the update time for informations in the windows of CPM, module- or signal diagnosis can be optimized by switching some fieldstations which data is actualy not necessary to ´Scan Off´.

4.12 Livelist scan

This function polls the address range 0 to 127 on the selected COM port with diagnosis telegrams.

Fieldstations which respond but are not in the project database are marked as grey dotted CPM symbol.



4.13 Generate Configuration Data According Hardware

With this function the realy existing modules on the rail of a fieldstation can be read via the CPM and stored in the project data base of I.S. Wizard.

Attention!
All existing configuration and parameter data of the fieldstation are **deleted**!
Parameters are not read from the modules of the fieldstation. If current configuration data should survive, a backup of the project file should be done first. All parameters of the moduls are written to the project file with it´s default values.
With this function new configuration data for a first startup or for test purposes of the system can be generated very quickly.
During operation or for error correction this function is not allowed!

Using redundant CPM: If two CPM´s are on the rail of one filedstation and this function is executed, the CPM parameter ´IS1 CPM redundant´ will be set to the default value ´No´. This parameter has to be set manually to ´Yes´ before the configuration and parameter data are transmitted to the fieldstation.

Function call:
Via the right mouse button on the CPM symbol in the project tree in the operation mode ´Online´.

4.14 Transmit Configuration

4.14.1 Transmit Configuration from IS1

The configuration and parameter data of the CPM and all IOM included in a field station are read by the CPM and stored in the project data base of I.S. Wizard by means of this function.

Note!

All configuration data of the field station in the project data base of I.S. Wizard existing **will be deleted** or overwritten! In case that former configuration data of the project data bas should continue to exist, the previous backup of the project file is to be carried out.

Documenting data (Tag numbers, comments, project documentation ...) will not be transmitted to the CPM but remain in the project file. These data remain existent by means of the function ´Transmit configuration from IS1´, provided that the module type read from the system corresponds with the module type configured so far in the data base (individually for each slot). In case of a discrepancy, the documenting module data of the affected slot will be deleted.

For protocols where configuration and parameter data are written from the AS to the field station (e.g. PROFIBUS DP), this function will be called up automatically by I.S. Wizard in online operation, as soon as configuration and parameter data are changed by the AS.

4.14.2 Transmit Configuration to IS1

The configuration and parameter data existing in the project data base will be transmitted to the field station selected. After the transmission is finished, the CPM will get active and online diagnosis functions can be carried out via I.S. Wizard. Consequently the operation of an IS1 field station for testing and commissioning is possible without AS.

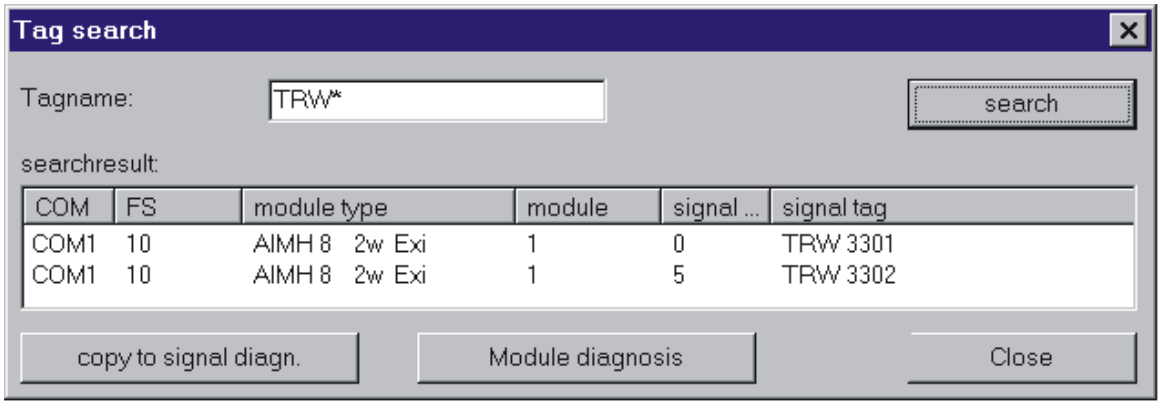
For protocols, where the configuration and parameter data are written from the AS to the field station (e.g. PROFIBUS DP), this function is blocked as soon as the AS is in data exchange with the field station. In this case, the AS overwrites the previously existing configuration and parameter data.

For protocols, where configuration and parameter data are written from I.S. Wizard to the field station (e.g. MODBUS), this function can be carried out even in operation. During the data exchange to the AS, maximum one telegram is disturbed, which is corrected by a telegram retry. However, it has to be paid attention to the fact that the data mappin in the AS does not have to be changed because of changes of the configurationd data (see coupling description → Online extension of IS1 fieldstations ...).

Function call:

Via the right mouse button on the CPM symbol in the project tree in the operation mode ´Online´.

4.15 Tag search

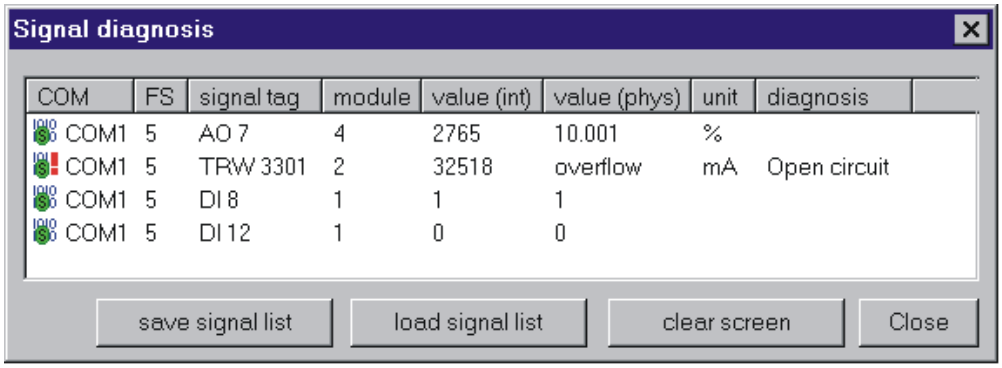


In the project data base, the given Tag name (Signal tag) is searched.

The Wildcards ´*´ for a group of any characters as well as ´?´ for a single character is possible.

4.16 Signal diagnosis

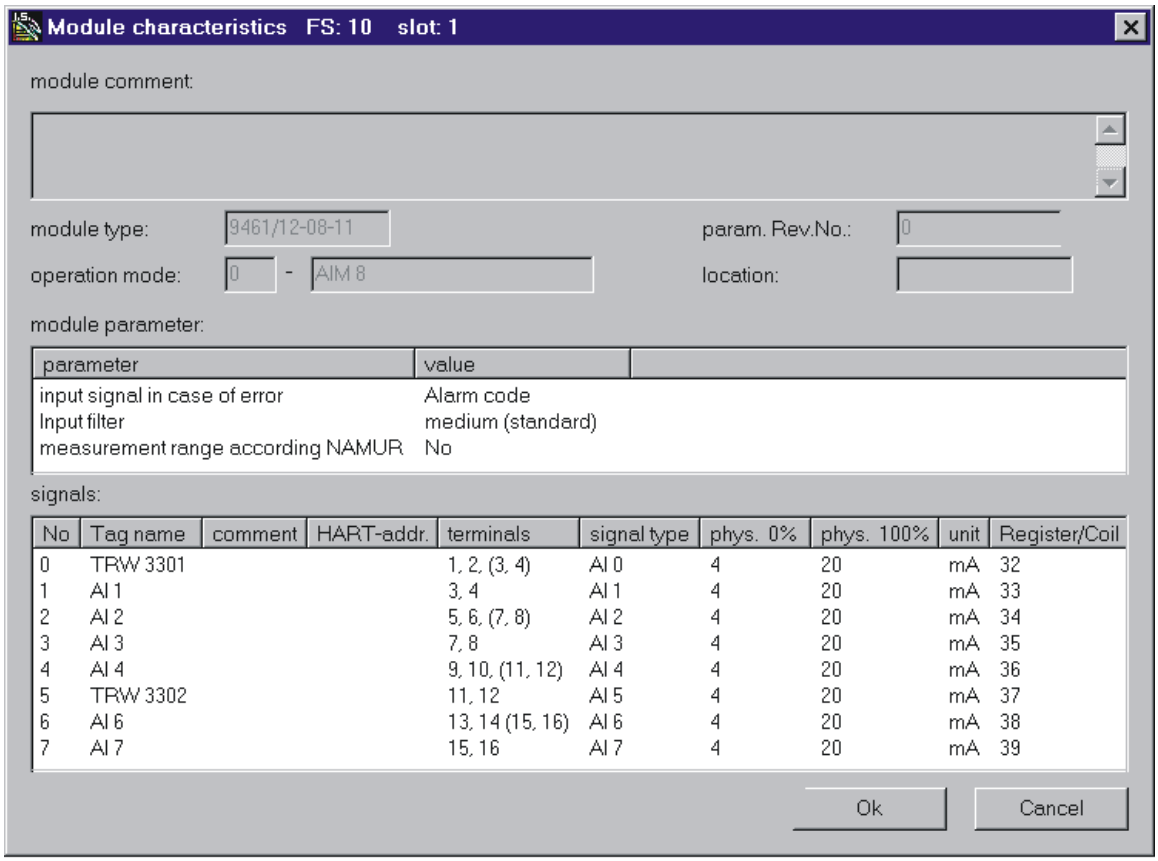
In this window, signals of different modules as well as different field stations can be indicated together.



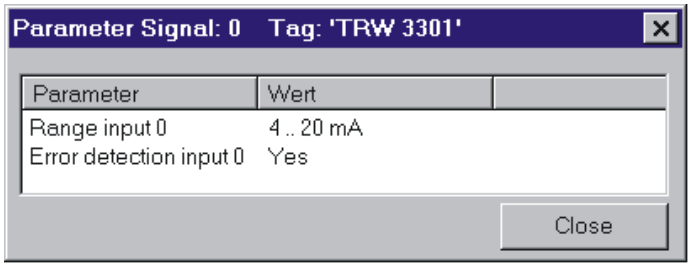
Signals are added via the key ´copy to signal diagnosis´ in the windows ´Module diagnosis´ and ´Tag Search´.

The current signals contained in the list are stored in the project file via the key ´save signal list´.
After a later restart of I.S. Wizard the stored list can be recovered via the key ´load signal list´.

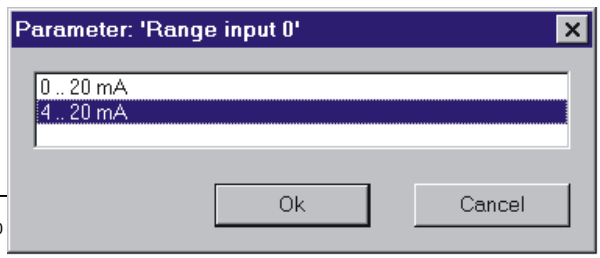
4.17 Signal parameter



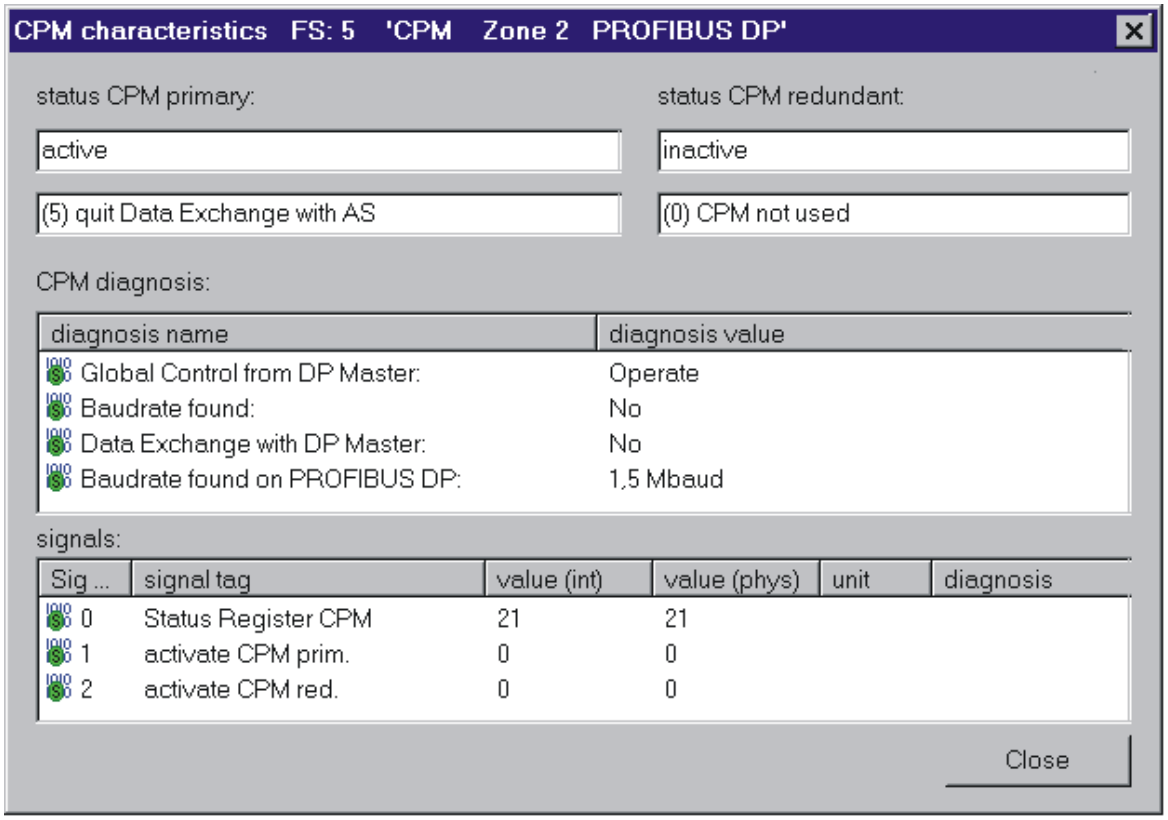
When double-clicking on a line in the area **signals** in a column containing no editable cells (e.g. No.), a window opens showing the signal parameters:



When double-clicking on **signal parameter**, a window opens for the input of a parameter or parameter selection.



4.18 CPM diagnosis



If no data update is possible, ´####´ is indicated.
If all values indicate ´####´ then check the status of the CPM, the address adjustment of the CPM, the COM port of your PC and the physical connection to your field station (Service bus).
If only some values in the area ´CPM diagnosis´ indicate ´####´ then the firmware of the CPM is not supporting this diagnosis information. Please check the firmware revision of the CPM in this case.
If no CPM is active (e.g. after Power On without AS), one CPM can be activated via the function ´transmit configuration to IS1´, which enables the test operation without AS.

Status CPM:
active = CPM is in cyclic data exchange with the IOM
inactive = CPM is ´Standby´

below, the state of the AS interface is indicated:

(0) CPM not used (e.g. if red. CPM is not existent)
(1) hardware fault CPM
(2) data Exchange with AS (config + param. from I.S. Wizard)
(3) no data exchange
(4) config- or prm. Error

(5) quit data exchange with AS
(6) data exchange with AS (config + param. from AS)
(7) no response from inactive CPM (the active CPM does not receive an answer from the inactive CPM via rail)

CPM Diagnosis
Information on the state of the CPM.

9440 CPM diagnosis using PROFIBUS DP

Diagnosis		**Function / required action**
Global Controll from DP master	Operate / Clear	Status of the last Global Control command from DP master. In ´Clear´ state the output signals are brought to save position.
Baudrate found:	Yes / No	Status of the PROFIBUS Chip in CPM
Data Exchange with DP Master	Yes / No	
Baudrate on PROFIBUS DP:	[Baudrate]	
DP Diagnosis Update counter:	[0 – 255]	Counter is incremented when the diagnosis data in CPM changes.
Line redundancy:	X1: receieve from AS OK / disturbed	Only valid if parameter ´Line redundancy´ = Yes and a 9440 CPM supporting line redundancy is used.
Line redundancy:	X2: receieve from AS OK / disturbed	
Line redundancy:	X1: transmit to AS OK / disturbed	
Line redundancy:	X2: transmit to AS OK / disturbed	
Diag Byte 7.0	- / Error in IS1 parameters from DP master	Check the parameters of the fieldstation in DP Master
Diag Byte 7.1	- / Error in IS1 configuration data from DP Master	Check the configuration data of the fieldstation in DP Master
Diag Byte 7.2	- / Version conflict GSD / CPM	Check the revision of CPM firmware and GSD file.
Diag Byte 7.3	- / SPC4 error	Hardware error -> exchange CPM
Diag Byte 7.4	- / Slot error CPM	CPM is located in wrong slot or connection between CPM and rail is disturbed.
Diag Byte 7.5	- / Redundant CPM descriptor required.	Please check the configuration rules for CPM redundancy
CPU Redundancy		

9440 CPM diagnosis using MODBUS RTU:

Diagnosis		**Function / required action**
Line redundancy:	X1: receieve from AS OK / disturbed	Only valid if parameter ´Line redundancy´ = Yes. and a CPM supporting line redundancy is used.
Line redundancy:	X2: receieve from AS OK / disturbed	
Line redundancy:	X1: transmit to AS OK / disturbed	
Line redundancy:	X2: transmit to AS OK / disturbed	

Note: The cable redundancy using 9440 with MODBUS RTU is prepared, but still not currently available.

9442 CPU Diagnosis using MODBUS TCP, EIP, PN

Diagnosis		**Function / required action**
CPU	OK / Failure CPU-L/R	Check Power Module supply voltage. CPU exchange is required if OK
Power Module PM	OK / Failure PM L/R	Check Power Module supply voltage. PM exchange is required if OK.
Redundancy parameter CPU	OK / red. CPU observation deactivated.	Parameter ´Red. CPU = Yes´ shall be enabled if red. CPU are plugged.
Redundancy parameter PM	OK / red. PM observation deactivated.	Parameter ´Red. PM = Yes´ shall be enabled if red. Power Module are plugged.
Socket backup memory	OK / Socket backup memory disturbed	System operation till next Power On/CPU Reset is possible. Socket exchange is required on next operation stop.
Temperature monitoring	OK / Temperature Alarm CPU / PM	Ambient temperature around the CPU or PM is out of spec. In case of overtemperature reduce ambient temperature or increase ventilation, shadowing.
Load monitoring PM	OK / PM overload	Reduce Power Module load!
Operation monitoring CPU-L	OK / Maintenace Request CPU-L	Exchange of module recommended due to operating conditions.
Operation monitoring CPU-R	OK / Maintenace Request CPU-R	
Operation monitoring PM-L	OK / Maintenace Request PM-L	
Operation monitoring PM-R	OK / Maintenace Request PM-R	
Slot Addressing PM-L	OK / Slot address error PM-L	The module has detected an incorrect change of the slot address during operation. -> Exchange PM and send it back to STAHL.
Slot Addressing PM-R	OK / Slot address error PM-R	
IP-AS Address	OK / Error	Check and correct IP address, subnet, and gateway settings of Ethernet AS interface.

9442 CPU Diagnosis using PROFIBUS DP

As above and in addition:

Diagnosis		**Function / required action**
Data Exchange with DP Master	Yes / No	-
Diag Byte 7.4	- / Slot address error CPU	The CPM has detected an incorrect change of the slot address during operation. -> Exchange CPM
Baudrate on PROFIBUS DP:	[Baudrate]	-
Baudrate found	Yes / No	-
Zustand DP Master	Operate / Clear	State of the last global control command from the DP master. In ´Clear´ state the output signals are set to safety position.
Diag Byte 7.0	- / Error in IS1 Parameter from DP Master	Check parameter setting in DP master.
Diag Byte 7.1	- / Error in IS1 configuration data from DP Master	Check configuration data in DP master

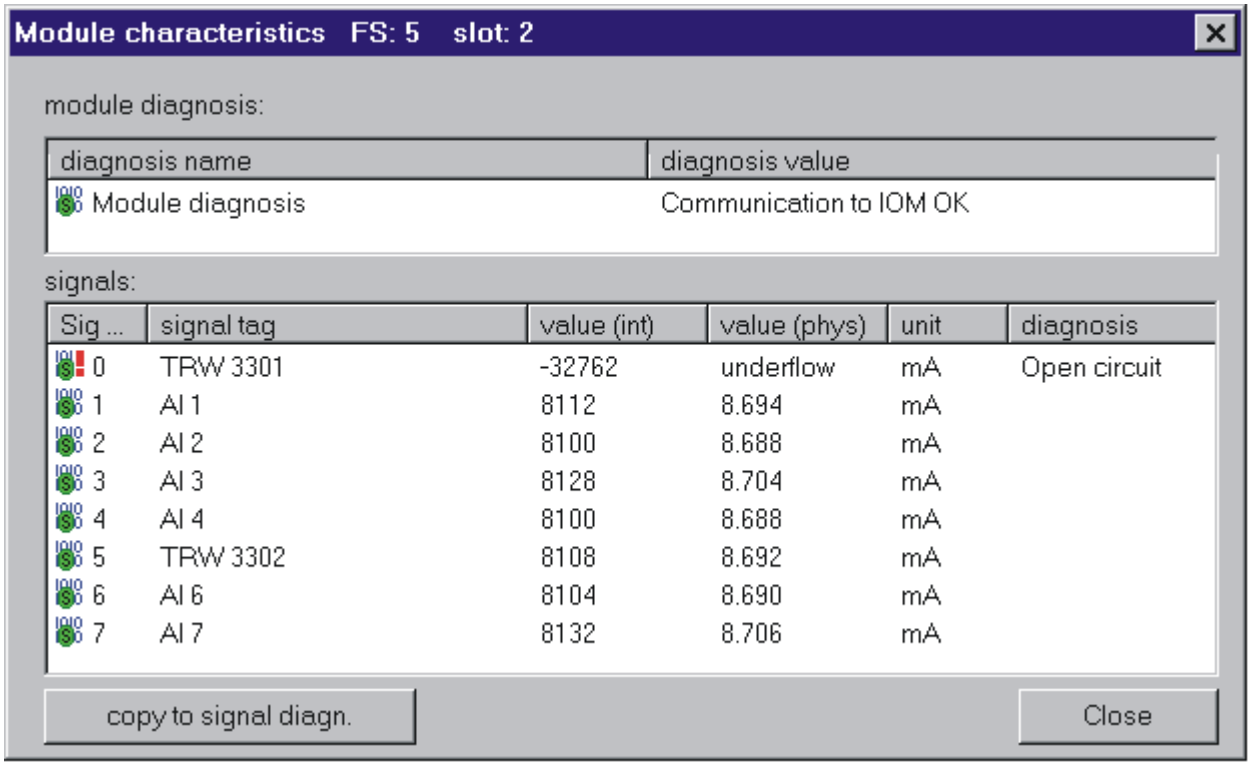
Diag Byte 7.2	- / Version conflict GSD / CPU	Version conflict of GSE file and CPU Firmware. Use GSE file compatible to CPU Firmware.

Signals
For the redundancy control by AS, status and control registers are used with the Profibus, which are indicated here.

Status message

There is a discrepancy between the data in CPM and the project data base in I.S. Wizard. In this case, the module diagnosis is not possible.
For data adjustment, the function ´Transmit configuration from or to IS1´ is to be carried out.
Afterwards, all diagnosis functions are available again.

4.19 Modul diagnosis



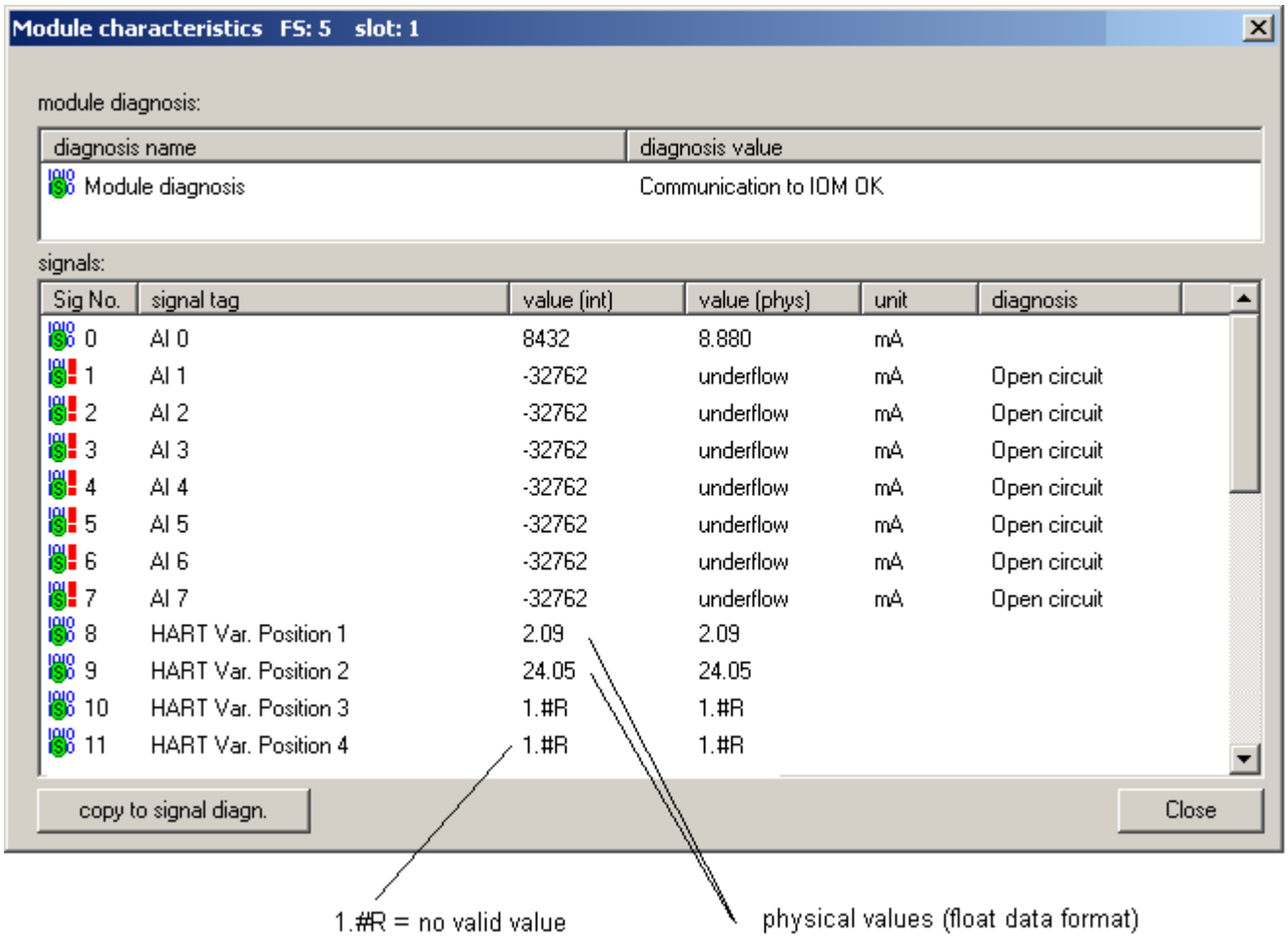
Indication of all signals of a module as well as the diagnosis indication.
If cyclic data update is not possible, ´####´ is indicated.
In this case, check the status of the CPM (CPM diagnosis) and the physical connection to your field station (Service bus).

Copy to signal diagnosis
Individual signals can be selected by the mouse and and taken over to the window ´Signal diagnosis´ by keypress

Force signals
For output signals, the window ´Force signal´ can be opened by double-clicking on a line of a signal and signals can be controled (only when AS is not in data exchange).

4.20 HART variables diagnosis

Example: Display of HART variables in the online Module diagnosis:



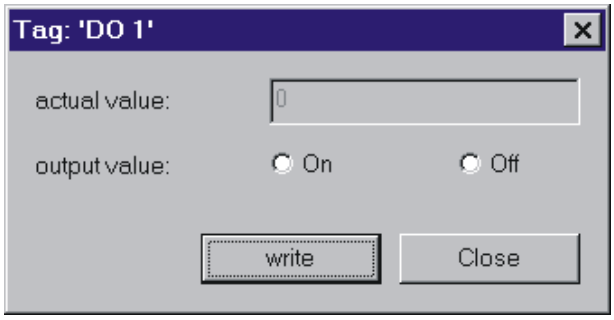
Attention:

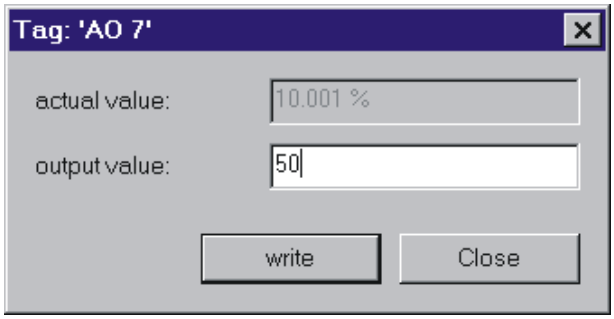
If a HART field device is new connected to an IS1 HART module during online operation, it may take up to 20 seconds to the first transmission of the HART values because not used HART inputs of the HART modules are scanned in the background in a slow cycle. If the new connected HART device is found, the update of the HART variables will be done with the maximum possible speed.

4.21 Force signals

In the window ´Module diagnosis´ and ´Signal diagnosis´, the output signals of I.S. Wizard can be controlled.

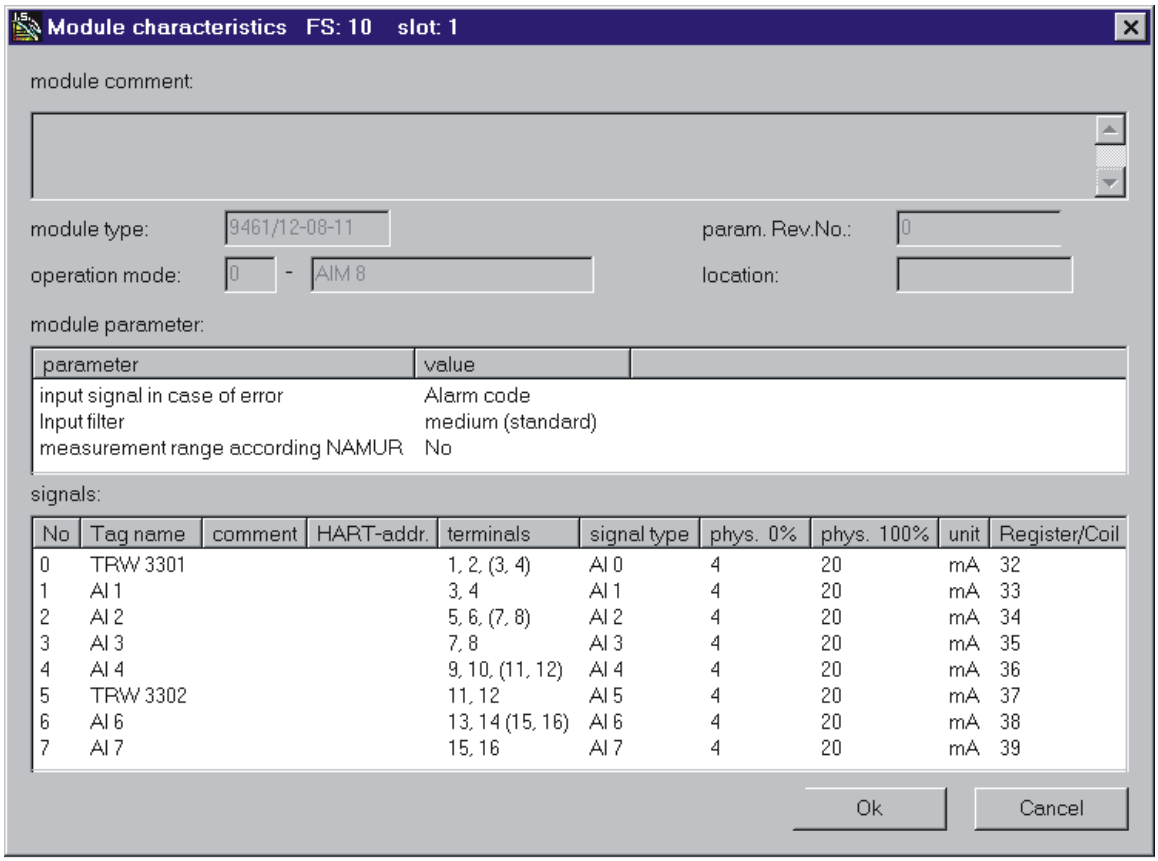
When double-clicking on an output signal in the window ´Module diagnosis´ or ´Signal diagnosis´, depending on the signal type, one of the following windows opens:



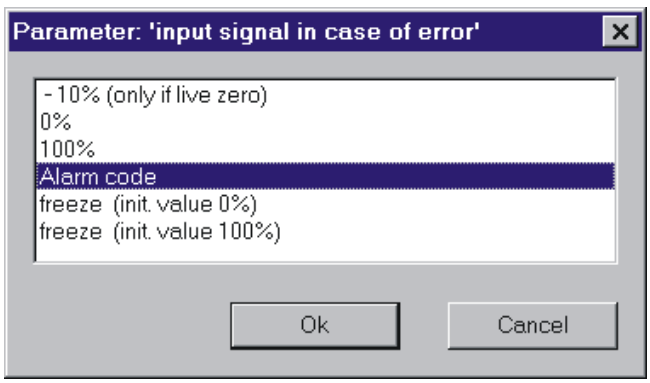


For AO signals, a physical value within the valid value range is to be put in.
Inputs out of the valid value range are not accepted.

4.22 Module Parameter Input



When double-clicking on a line in the area **module parameter**, a window opens for the input of the parameter and parameter selection:



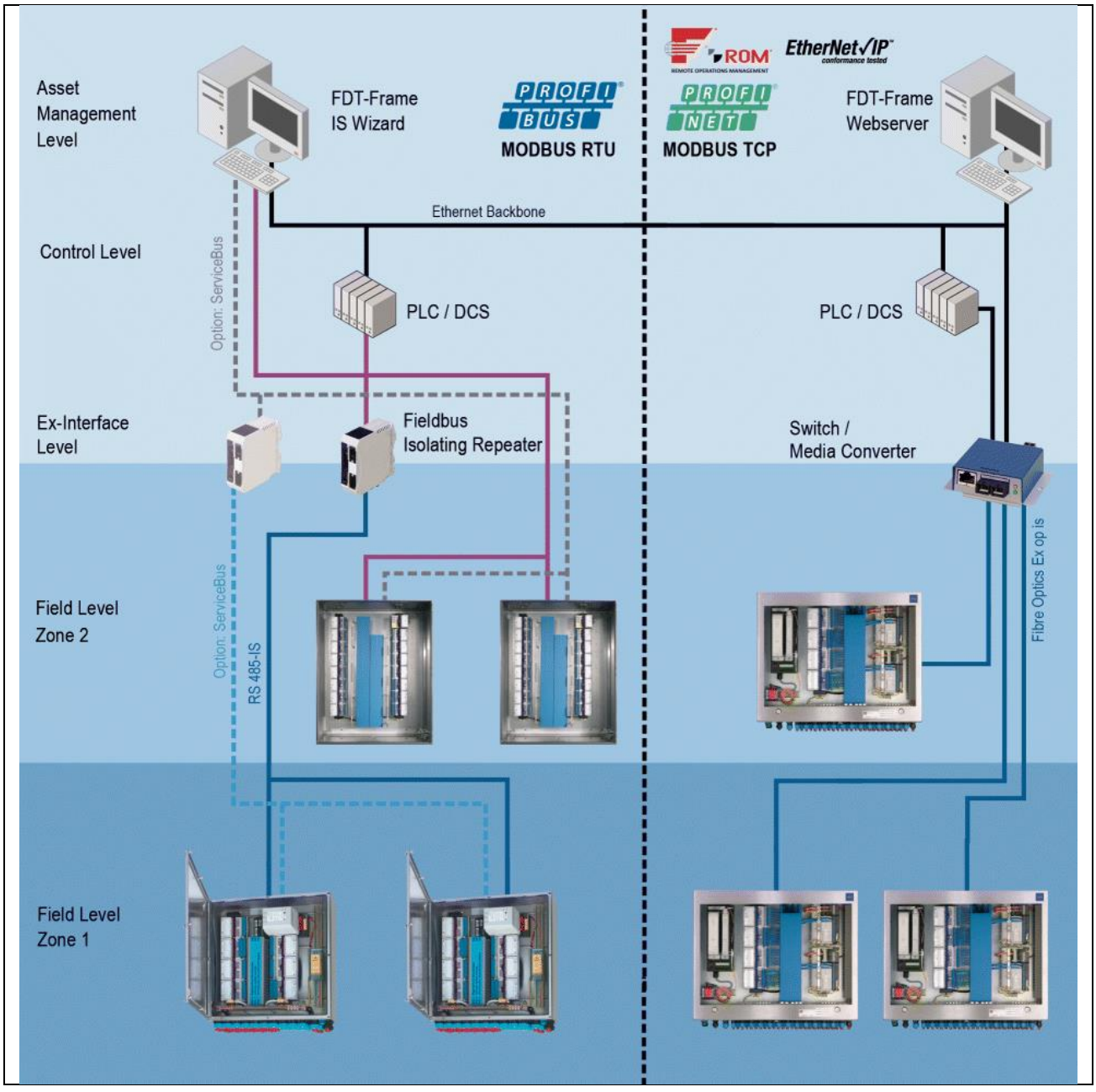
5 Technical data

Selection table				
Version				Ordering code
	fault diagnosis	printing of labels	max. number of input/output modules	
Modbus version for configuration and parameterization of an IS1 system	no	no	any	**9499/MOD-00**
full version	yes	yes	up to 20	**9499/Full-04**
			up to 100	**9499/Full-05**
			bigger than 100	**9499/Full-06**

Technical data	
System requirements	
Requirements on PC	processor: at least Pentium 600 MHz hard disk: 30 MByte free space resolution: at least 800 x 600 COM ports: min. 1, max. 9
supported operating systems	WINDOWS 95, WINDOWS 98, WINDOWS NT, WINDOWS Professional 2000, XP, WINDOWS 8 , WINDOWS 10
Functions	
Configuration (type and number of modules) and parameters of all modules for an IS1+ System	preparation offline storage in project data base download into IS1+ system online upload from IS1+ System (redocumentation)
inputs and outputs (I/O signals)	reading online
outputs (I/O signals)	setting online
diagnosis data from field stations, modules and signals	reading online
module-specific information	reading online (type of module, module revision, series number)

report for project documentation	Printing of lists on monitor, printer or into files • list of IS1+ field stations • list of modules of a field station • list of parameters for CPU & power module • list of signals of a field station • list of module- and signal-parameters of a field station
project documentation, comments, TAGs	storage in project data base (no download into the IS1+ system)
labels for IS1+ modules with TAG numbers	printing
import and export of project data (TAGs)	Via CSV-file
Operating modes	
I.S. Wizard stand-alone-operation, without field bus	all functions, online and offline
I.S. Wizard and Modbus operation at the same time	all functions, online and offline
I.S. Wizard and Profibus DP operation at the same time	online download of all functions, online and offline, except of configuration and parameters into IS1+ system
Network characteristics	
The network capability of I.S Wizard is realized by the internal communication of the software modules via OPC (OLE for Process Control)	requirement: the network clients have to communicate with the server PC via DCOM
Network	Microsoft work group- or domain-networking
number of network PCs	The number of network clients is theoretically unlimited and depends on the quality of the Windows network and the resources of the server PC. All network clients must have a consistent data base, an identical hardware- and project data base
number of COM ports	max. 256, one PC realizes the communication with the ServiceBus

ServiceBus Topologies	
connection of field stations to the ServiceBus in Zone 1	to ServiceBus interfaces (X3) of the CPU & power module types 9440/..., the ServiceBus address is identical with the adjusted field bus address. In the redundant CPU & power module, both CPMs are connected to the ServiceBus. The ServiceBus address is the field bus address of the primary CPMs
for segments in Zone 1	fieldbus isolating repeaters (Type 9185) required
connection of field stations to the ServiceBus in Zone 2	To USB ServiceBus interface (X3) of the Type 9442/35 CPU module; the address on the ServiceBus is identical with the set fieldbus address. If the CPU & power module is redundant, both CPUs are connected to the ServiceBus; the ServiceBus address is the fieldbus address of the primary CPU
for segments in Zone 2	Over the 9787 USB RS485 converter or using a USB zero modem cable or using a virtual ComPort module, e.g. WuT
interface	RS 485
max. transmission speed	9,6 kbit/s
max. cable length of one segment	1200 m
max. number of field stations per RS 485IS segment	31
max. number of field stations, RS 485 segment non-I.S.	31



Transmission of HART commands on the ServiceBus	
as an alternative to I.S. Wizard, a HART management software package can access on the ServiceBus	

compatible HART management software packages	• PRM von Yokogawa • AMS from Emerson • FieldCare™ Fa. E+H (FDT-Frame) • PACTware™ (FDT-Frame) • PDM from Siemens • other …

6 Release Notes:

I.S. Wizard Release	Extensions
3.2.17	default parameter “watchdogtime AS interface(x100ms)” changed default parameter „timeout for output modules“ changed
3.2.16	HWDB update: added modul status DOMR 9477/34-04-11, 9477/35-08-11, DOMV 9478/32-08-02.
3.2.15	Display of the direction in the dialog windows module parameter and module diagnosis corrected.
3.2.14	HWDB update: Maintenance Diag CPU and PM byte offset changed from 5 to 4.
3.2.13	HWDB update 9469 redundancy included , 9442 EIP Prm ´Datenstruktur 3´ extended
3.2.12	OPC-Server update COM-ports higher 12
3.2.11	CPM-diagnosis dialog size adjusted.View of register/coil in modul characteristics dialog . Upgrading of Modbus print functon for new CPM 9442.
3.2.10	Menu print-function completed. Format of dialog „signal diagnosis“ changed to „variable size“. Minimal size of dialogs: „modul diagnosis“, „change parameter“ and „signal diagnosis“ has been set.
3.2.9	Menu print-> „modul list“ replaced by 2 separate lists: 1.Plugged modules 2.Configured modules
3.2.8	Label-print function supported new IS1+ IOM
3.2.7	Com port limit has been extended from 12 to 256. New IS1+ Exn IOM 9469/3x-.., 9471/3x-.., 9472/3x-.. added. Parameter dialog for Signal Parameters enlarged.
3.2.6	Documentation of Module Typenumber of IS1+ IOM now without ´xx´ wildcards after online readback.
3.2.5	The DI and DO signal areas in .csv Export of MODBUS registers are now beginning at 1001/ 1501.
3.2.4	Contexthelp is now compatible to Windows 7/Vista. Modules with configurable Input and Output channels show the current configured direction in modul parameter and modul diagnostic.
3.2.3	.csv Export of MODBUS registers for all signals of a configured IS1 field station.
3.2.2	Parameters of 9482/3x extended. Updated print files (.WMF) for module labels for modules.
3.2.1	New IS1+ IOM supported: 9482/3x
3.2.0	New IS1+ IOM supported: 9468/3x..., 9470/3x.., 9475/3x…

3.1.2_64	WIN7 32/64 supported
3.1.2	New I/O-module in hardware data base V3.0.1.2 9478/28-08-51 **DOMV** - CPM parameter added: ´Address Offset backup CPM PNO Red´ - CPM diagnosis added: ´Backup CPM not available´
3.1.1	Communication problems on Service bus using Com ports with larger data buffers removed. COM 10 – COM12 supported **New I/O-modules in hardware data base:** 9462/12-06-11 **SAIMH** 9462/12-08-11 **SAIMH**
3.1.0 SP3	**New Parameter for CPM 9440/12-01-11: Line Redundancy** (required: 9440/12-01-11 CPM Firmware Rev. ***01-35 or 02-35*** and CPM Hardware Rev. ***J***)

I.S. Wizard Release	Extensions
3.1.0 SP2	New Parameter for TIMR 8 9480/12-08-11: PT100 GOST ГОСТ 6651-94 (-200°C… +1100°C) M50 GOST 6651-94 (-200°C… +200°C) M100 GOST 6651-94 (-200°C… +200°C) (required: 9480 module Firmware Rev. *02-04*) New CPM in hardware data base: 9441/12-00-10 CPM Ethernet Zone1 24V New print files (.WMF) for module labels for modules: 9470/25-16-12, 9461/15-08-12 and 9466/15-08-12
3.1.0 SP1	**New I/O-modules in hardware data base:** 9470/25-16-12 **DIM16 + Stat, DIM16 + Stat+CF** 9461/15-08-12 **AIM 8, AIM 8+4HV, AIM 8+8HV** 9466/15-08-12 **AOM 8, AOM 8+4HV, AOM 8+8HV** New print files (.WMF) for module labels with IECEx approval: All CPM's and modules Modbus RTU function addon (CPM Firmware ≥ ***11-08*** or ***10-04ß*****):** CPM Start Condition via control register
3.1.0	Database allocation error using several COM-Ports simultaneously removed.
3.0.0	Support of standard- and extended Parameterset of the IS1 remote I/O-system communication of HART variables on PROFIBUS DP or MODBUS **New CPM in hardware data base:** 9440/22-01-11 CPM Zone1 24V PNO
2.2.5 SP5	Module 9480 TIM8 R: Bugfix for Parameter ´Input Filter = Off´
2.2.5 SP4	**Modules HART-Variable supported:** AIMH 9461/12-08-x1, AOMH 9466/12-08-11
2.2.5 SP3	**New CPM in hardware data base:** 9440/22-01-21 **CPM** 230V Zone 1
2.2.5 SP2	**New I/O-modules in hardware data base:** 9475/22-04-21 DOM 4 OD Exi2 New print files (.WMF) for module labels for modules: 9475/22-04-21, 9475/22-08-51, and 9475/22-08-61
2.2.5 SP1	**New Parameter for TIM 8 mV 9481/.. : Thermocouple Typ XK(L)** (required: 9481 modul FW-Rev. 01-01)

I.S. Wizard Release	Extensions
2.2.5	**New I/O-modules in hardware data base:** 9475/22-08-51 **DOM** 8 OD Exi2 (OD=Output disable) 9475/22-08-61 **DOM** 8 OD Exi3 9477/12-08-12 **DOM** 8 60V Rel Z1 9477/12-06-12 **DOM** 6 250VRel Z1 **MODBUS Redundancy:** Redundant operation of two CPM in one Fieldstation supported. (see operating instructions IS1 MODBUS chapter 3.4.4 ´Transmit configuration and parameter data to redundant CPM´) **Language Support:** Support of french screenmasks.
2.2.4	- Import / Export function for signal data (TAG No., signal comment, analog scaling, HART address) - Function Labelprint: Selective printout of individual module labels - New parameter and CPM diagnoses for the function ´Line redundancy´ - New CPM parameter ´IOM 9-16 on rail X4: Yes/No´
2.2.1	**first official release supporting following additional features:** - German and english language support - Online Help - Print function for module labels **Attention !** Project files of older revisions (Rev 2.20 and older) can not be used with this new revision of I.S. Wizard. Please create new project files.
2.2.0 and older	First Beta Releases. Not all functions supported.

7 Support address

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8 Known Problems:

1. Error Message using Print function:

Reason: The Path name or File name of the project file is too long. Occours e. g. if project file is opened from a network drive.
Remedy: Store Project File on local drive on your PC or shorten the Path name or File name by renaming or shift the project file to higher levels of your file structure.