i f m S y s t e m S o l u t i o n s

Quick Guide

Article number:	AP3052
Article name:	App AC14 Data Collection
Version:	1.0.2
AC14 firmware version:	>= V3.1.2
URL (main page):	http://<*IP-Adresse**>:8080/datacol.htm
URL (additional pages):	-
Languages:	English/German
Limitations of the Demo mode:	The application stops after 60 minutes
Additional required hardware:	AC5225 and connected IO-Link devices, AS-i modules with analogue inputs or measurement systems of the type UMG103 from Janitza, connected via AS-i –serial-converter AC1155

* IP-Adresse der AC14-Konfigurationsschnittstelle

Short description

The ifm System Solutions App data collection (AP3052) provides the following functions:

- Scan of an AS-i network connected to an AC14 according to specific IO modules as well as the devices connected there.
- Graphical presentation of the devices found.
- Selection, conversion and labelling of up to 100 process data collected from the connected devices.
- Cyclic storage of the selected process data on SD memory card in a time frame of >= 1 minute
- Cyclic transfer of the selected process data to LINERECORDER SMARTOBSERVER in a time frame of >= 1 minute
- The process data will be transferred on the fieldbus interface of the AC14 and optionally through an integrated Modbus/TCP Server on the programming interface, once every minute.
- Registration of the identification data or serial number of connected devices.
- If available both AS-i circuits are supported.

Groundworks for using the ifm System Solutions App

At least one AS-i module (IO-Link or analogue) shall be connected to AS-i master 1 of AC14. The system shall be projected correctly.

The user interface

Main page: http://<*IP-Address**>:8080/datacol.htm

After the first start of the system, it scans automatically the AS-i circuit 1 and shows an overview of the detected devices. After click on one of the device icons, the upper right part of the screen, the input window, shows information about the device and allows some settings, if necessary. The language of the shown texts can be switched between German and English by means of the icons in the header

The scan will be signalized with a wait symbol  below the AC14 icon. In the input window the current scan state is explained as a text.
After finalizing the scan the system allows editing the process data.

In order to do that the user first has to log in with a correct password. After klick on 'Log in' the password dialog is opened:

User name: Setup
Password: setup

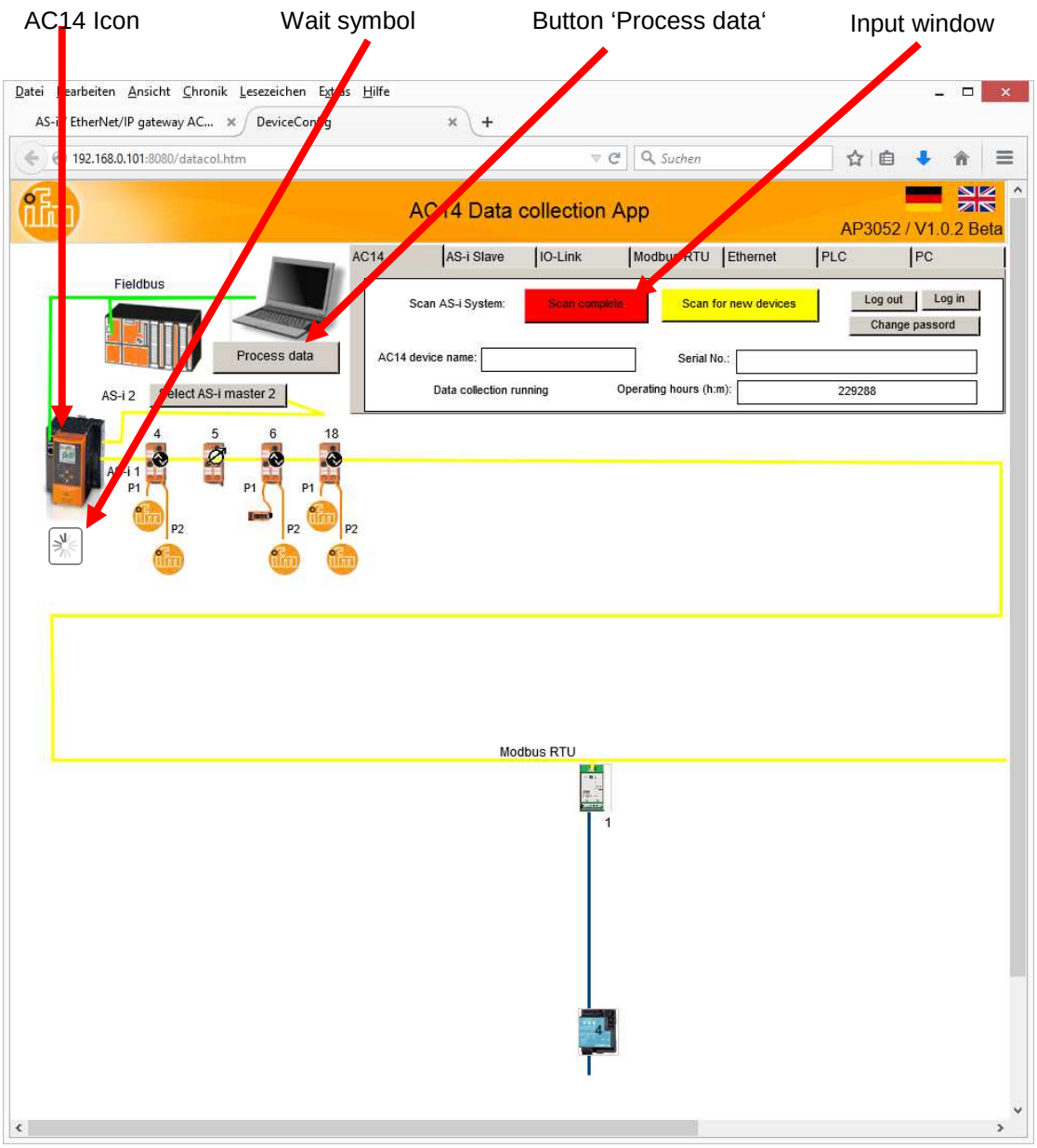
Please consider case sensitivity.
Please change the default password setting as soon as possible, and make sure to remember the new password, because a reset of the password can only be achieved by reinstallation of the App, which will delete all settings in the configuration.

After 15 minutes of inactivity the user will automatically be logged out. If another user is logged in, it will be shown in a yellow marked message.

Info

If IO-Link modules AC5225 with production code up to AE are used, the setting of the menu point 'No slave reset' in the AS-i master of AC14 has to be deactivated!

AS-i 1 > Master setup



During the scan, other settings are not possible.

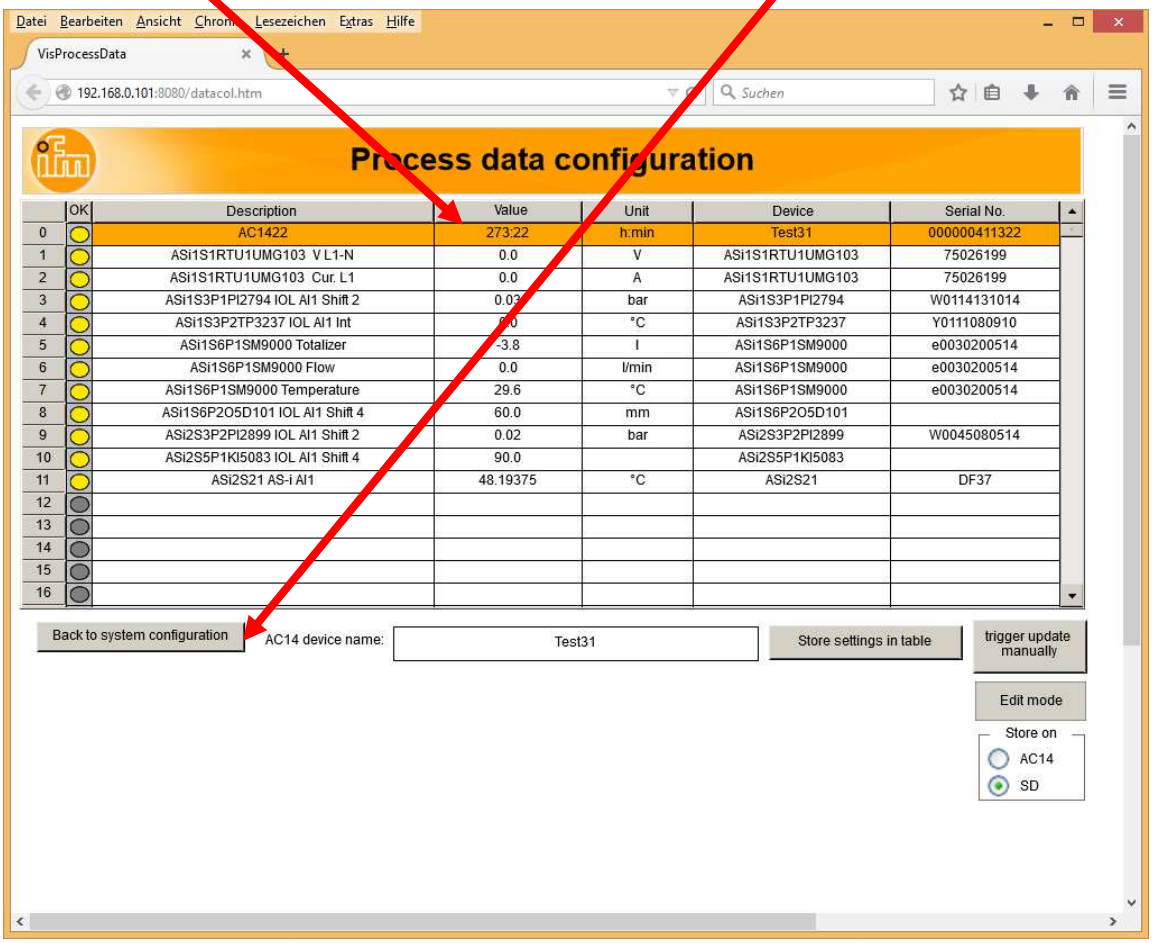
With the red button the scan can be initialized again. But in this case the old configuration and the data definitions are deleted.

If an existing configuration has to be extended to new devices please use the yellow button.

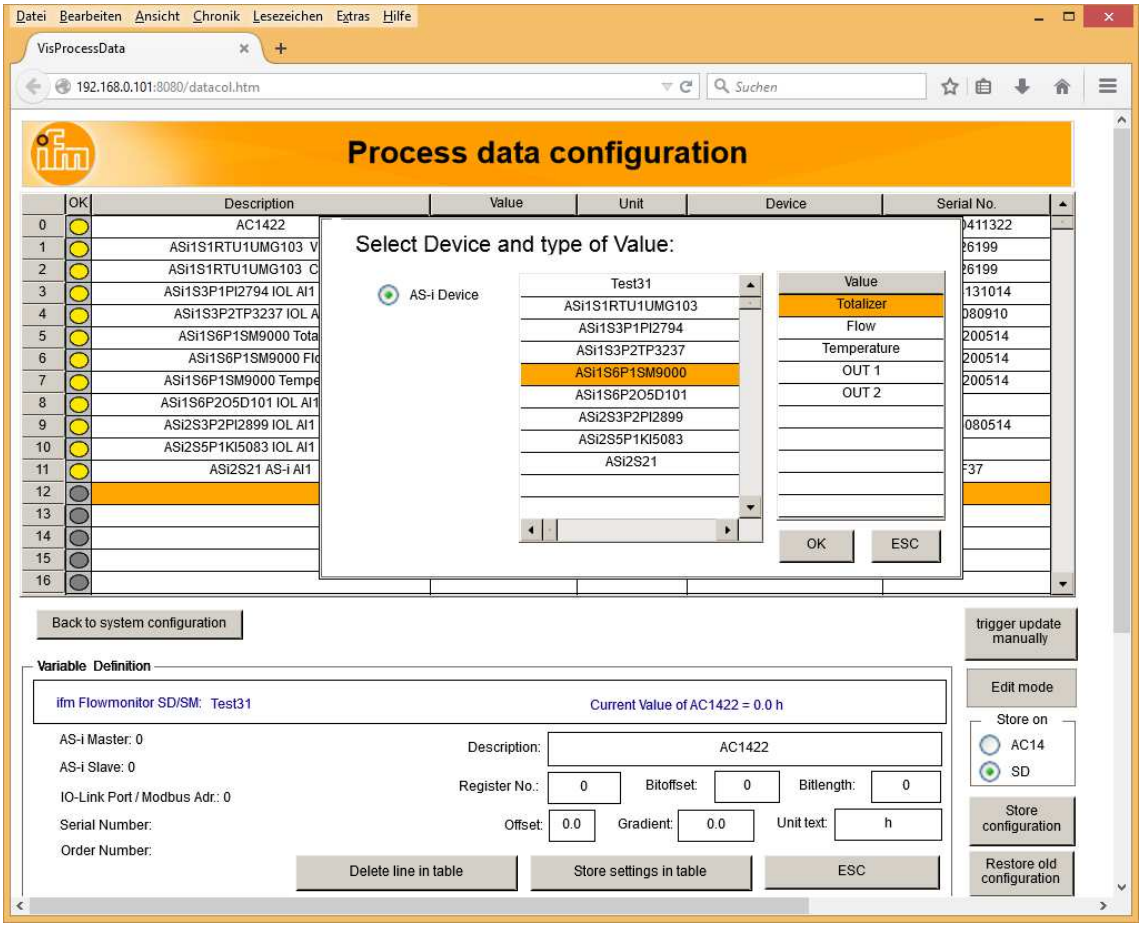
The configuration of process data is done in a table. It is shown when clicking on the button **‘Process data’** in the system overview screen. After a new system scan only line 0 of the table is filled with an operating hour counter of AC14. Only the device name can be edited here. An individual name allows the correlation to the dedicated unit if more than one AC14 is used in the application.

AC14 operating hour counter

Button ‚Back to system configuration‘



After click on an empty row of the table a new selection window opens. First a device has to be selected, then one of the predefined standard definitions has to be chosen. The selection has to be confirmed by click on **OK**. **ESC** discards the changes.

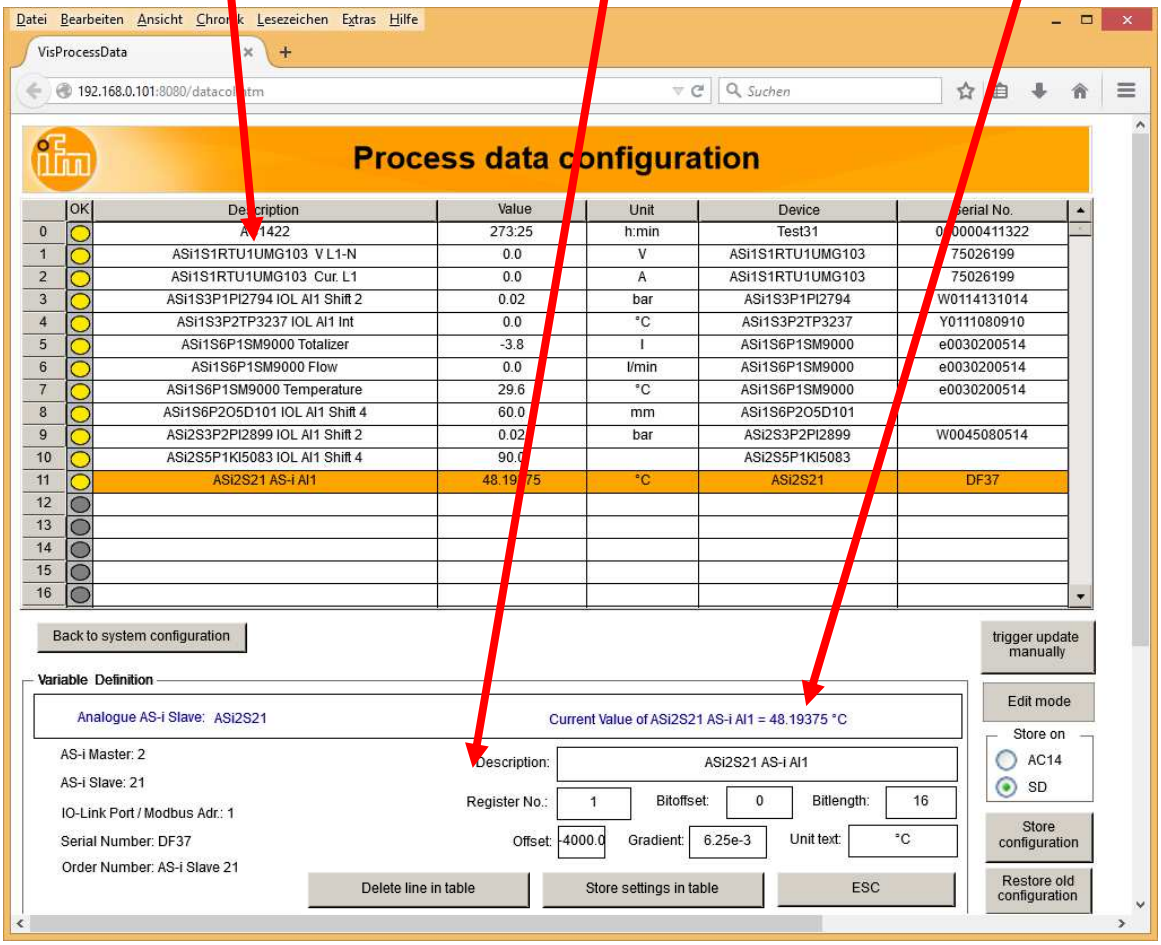


The selected variable definition is shown in the lower part of the screen, but it is not inserted in the table. The predefinitions in the right angled marked fields can be edited. After click on **'Store settings in Table'** the definitions will be copied into the table. The button '**ESC'** discards the settings.

Selection of the table row to edit

Definition and calculation of variables

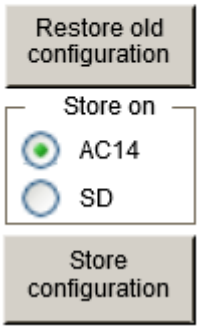
Presentation of the currently measured value, incl. calculation and label



The rows in the table can afterwards be edited but not be deleted.

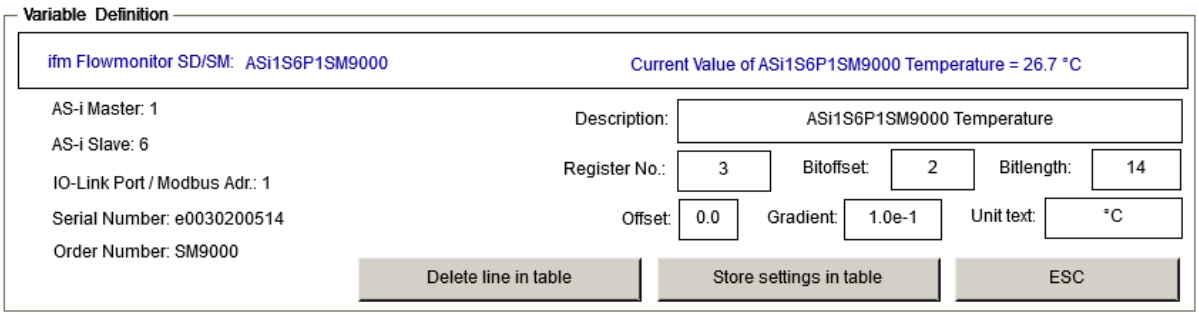
After definition of all necessary table settings the table itself can be stored permanently with the button **‘Store configuration’**. This stored configuration can be restored by the button **‘Restore old configuration’** if necessary. By default it is stored in the AC14, but it can be additionally stored on the SD memory card as well. When starting the AC14 automatically the configuration stored in AC14 will be used. The configuration stored on SD card has to be restored manually, if necessary.

With the button **‘trigger update manually’** a set of data is stored in a CSV file (comma separated values) on the SD memory card, if such a card is plugged into the AC14.



With the button ‘**Back to system configuration’** the system configuration screen is shown again.

The input fields have the following meaning:



Description: Text field (Label) which explains the process data value in the table explicit.

Register No.: Dependent on the device type this number defines the sequential number of the IO-Link process value, the AS-i analogue input value or the Modbus/RTU register, which shall be used.

Bitoffset: Removes a given number of least significant bits (Shifts value right).

Bitlength: Defines the number of evaluated bits.

Offset: Adds a fixed value to the measured value.

Gradient: Scaling factor for the measured value
(i.e. to generate decimal values out of integer ones).

Unit text: Text field containing the unit of the measured value.

The values for Bitoffset, Bitlength, Gradient, Offset and Unit can be found in the PDF device description of the ifm IO-Link devices on the ifm WEB page:

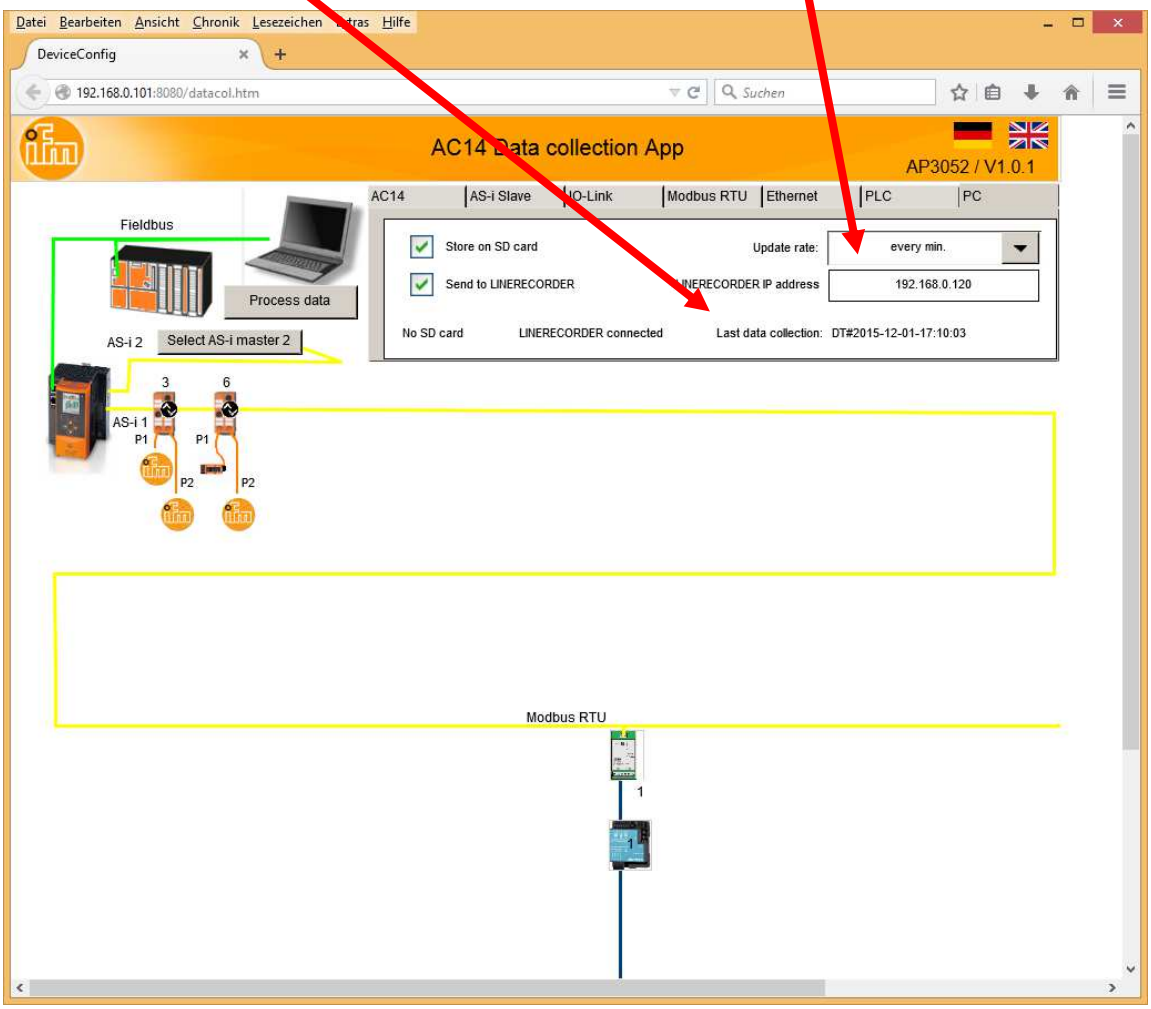
Name	Description	Datatype	Bitoffset	Bitlength	Value Range	Gradient	Offset	Unit
Totalisator	[PDV3]. Durchflussmenge. Der Wert entspricht der aktuellen Verbrauchsmenge seit dem letzten Reset	Float32T	32		**0 to 9999999**			
Durchfluss	[PDV2]. Der Durchfluss wird durch ein kalorimetrisches Messsystem gemessen	IntegerT	16	16	**0 to 840** 841 to 910 (OL)	1	0	m³/h std.
Temperatur	[PDV1]. Aktuelle Systmtemperatur. Um die reale Temperatur zu errechnen, muss [PDV1] um 2 Bits nach rechts geschoben und die Gradient-Offset Information mit eingerechnet werden. Bsp: T_real = (PDV1 >> BitOffset) * Gradient + Offset	IntegerT	2	14	-180 to -121 (UL) **-120 to 720** 721 to 780 (OL)	0.1	0	°C

After click on the folder PC or on the laptop icon, the update rate for the storage on the SD memory card as well as the transfer to the LINERECORDER software can be set. Date and time of the last storage is shown there, too.

For more information about the possibilities of the LINERECORDER software please contact your local ifm contact person.

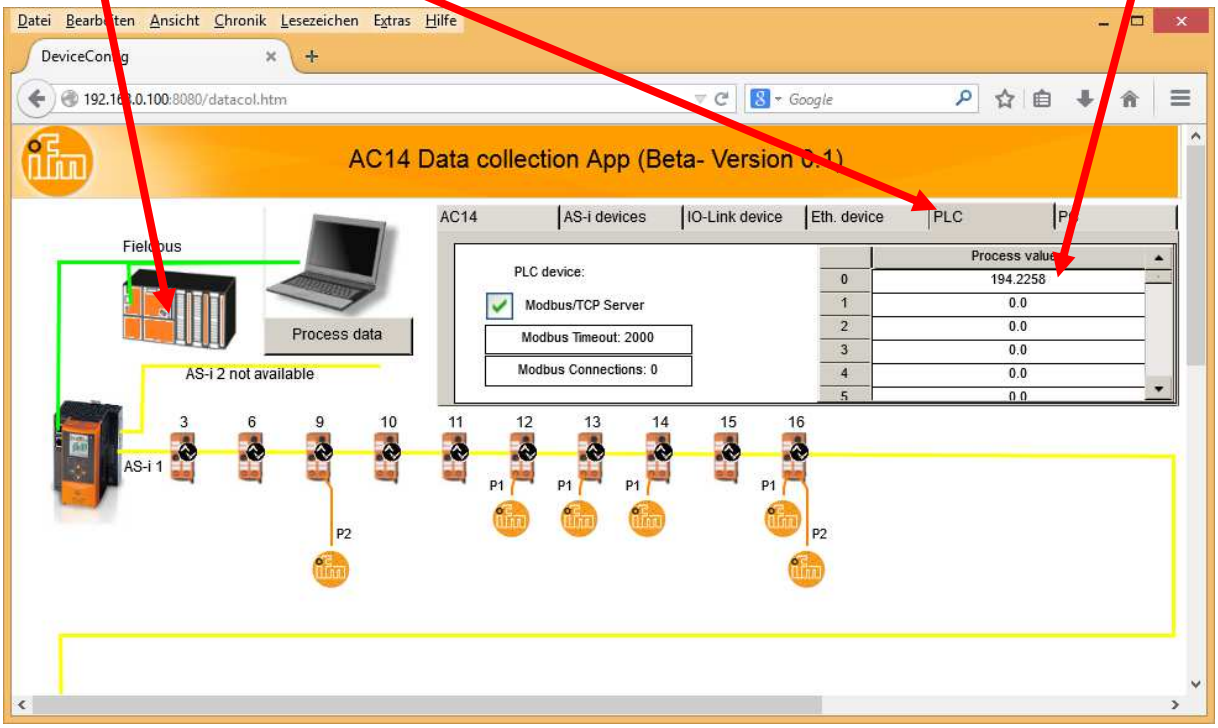
Time stamp of the last storage

Selection of the update rate



Up to 60 process values are transferred in the cyclic fieldbus data area of the AC14 and stored as ‘Real’ variable types (floating point variables). A list of currently transmitted process data variables is shown in the folder PLC in the input window. If activated in the same window, the Modbus/TCP server on the programming interface of AC14 is providing up to 100 floating point variables beginning on register 0 using 2 Modbus registers each value.

Mouse click on PLC Alternatively selection of folder PLC Current process values



The connection of Ethernet based input devices is planned but not available yet.

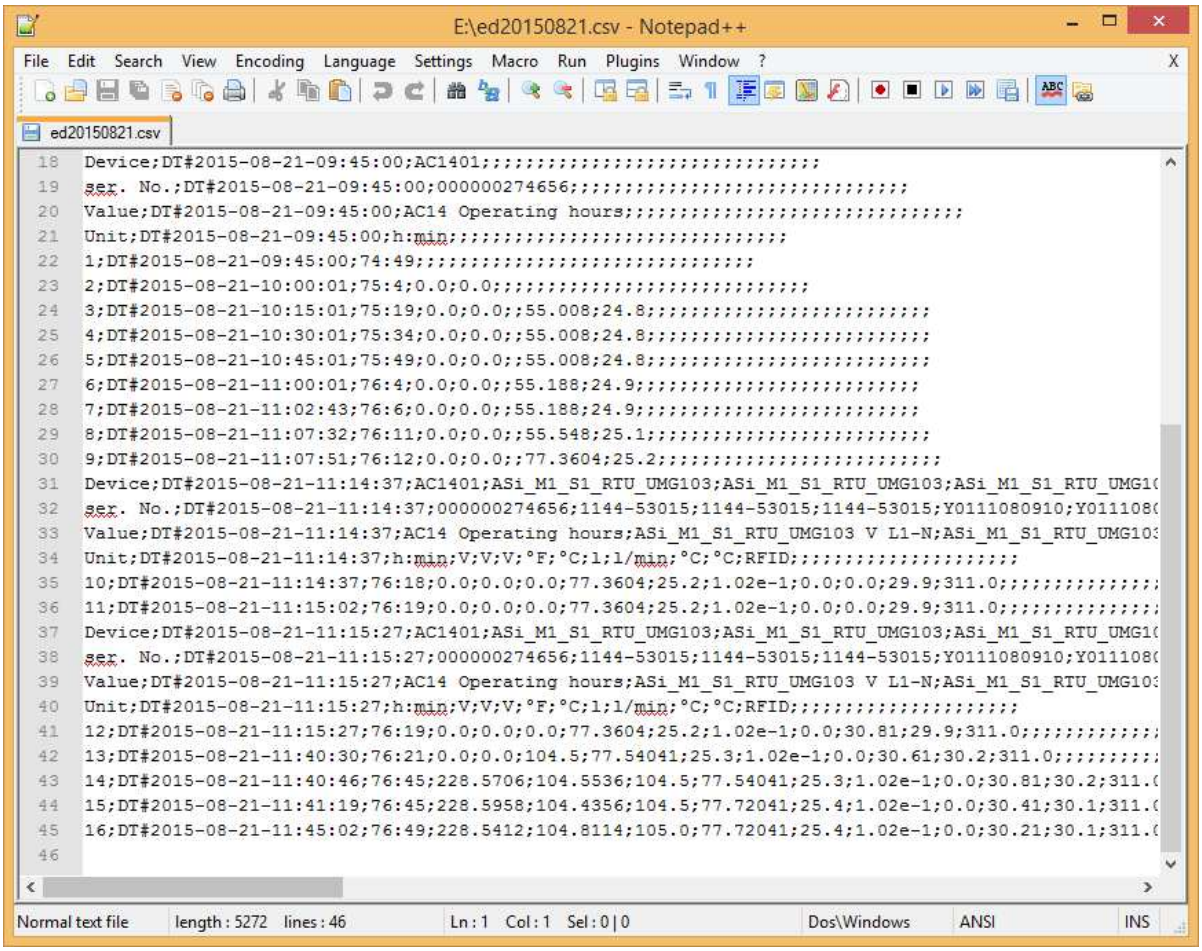
The App provides a daily new CSV file on the SD memory card. The name always starts with ‘ed’. The following numbers define the year, month and day of the generation.

The first four rows are used as header and define the device, its series number (if provided), the label and the unit of the process value.

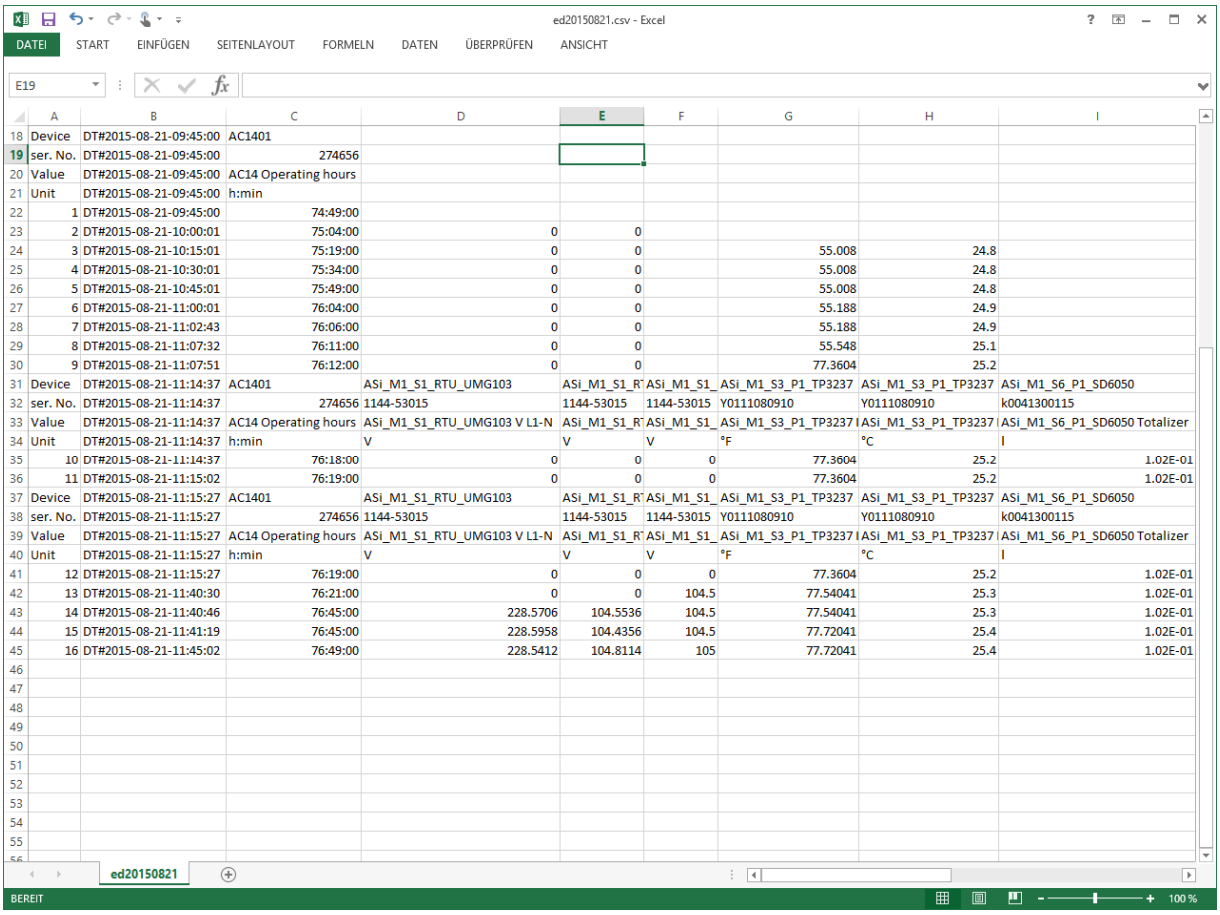
In the following rows the datasets with a leading serial number and a time stamp are stored. The columns are separated by semicolons.

If the data transfer to the input device is disconnected it will be marked in the CSV with ,---,.

After changes in the process data definition another 4 rows with the header information will be inserted.



The CSV file can be imported in spreadsheet calculation programs. For that, the point has to be interpreted as decimal sign.



	A	B	C	D	E	F	G	H	I
18	Device	DT#2015-08-21-09:45:00	AC1401						
19	ser. No.	DT#2015-08-21-09:45:00	274656						
20	Value	DT#2015-08-21-09:45:00	AC14 Operating hours						
21	Unit	DT#2015-08-21-09:45:00	h:min						
22	1	DT#2015-08-21-09:45:00	74:49:00						
23	2	DT#2015-08-21-10:00:01	75:04:00	0	0				
24	3	DT#2015-08-21-10:15:01	75:19:00	0	0		55.008	24.8	
25	4	DT#2015-08-21-10:30:01	75:34:00	0	0		55.008	24.8	
26	5	DT#2015-08-21-10:45:01	75:49:00	0	0		55.008	24.8	
27	6	DT#2015-08-21-11:00:01	76:04:00	0	0		55.188	24.9	
28	7	DT#2015-08-21-11:02:43	76:06:00	0	0		55.188	24.9	
29	8	DT#2015-08-21-11:07:32	76:11:00	0	0		55.548	25.1	
30	9	DT#2015-08-21-11:07:51	76:12:00	0	0		77.3604	25.2	
31	Device	DT#2015-08-21-11:14:37	AC1401	ASi_M1_S1_RTU_UMG103	ASi_M1_S1_R	ASi_M1_S1_	ASi_M1_S3_P1_TP3237	ASi_M1_S3_P1_TP3237	ASi_M1_S6_P1_SD6050
32	ser. No.	DT#2015-08-21-11:14:37	274656	1144-53015	1144-53015	1144-53015	Y0111080910	Y0111080910	k0041300115
33	Value	DT#2015-08-21-11:14:37	AC14 Operating hours	ASi_M1_S1_RTU_UMG103 V L1-N	ASi_M1_S1_R	ASi_M1_S1_	ASi_M1_S3_P1_TP3237	ASi_M1_S3_P1_TP3237	ASi_M1_S6_P1_SD6050 Totalizer
34	Unit	DT#2015-08-21-11:14:37	h:min	V	V	V	°F	°C	I
35	10	DT#2015-08-21-11:14:37	76:18:00	0	0	0	77.3604	25.2	1.02E-01
36	11	DT#2015-08-21-11:15:02	76:19:00	0	0	0	77.3604	25.2	1.02E-01
37	Device	DT#2015-08-21-11:15:27	AC1401	ASi_M1_S1_RTU_UMG103	ASi_M1_S1_R	ASi_M1_S1_	ASi_M1_S3_P1_TP3237	ASi_M1_S3_P1_TP3237	ASi_M1_S6_P1_SD6050
38	ser. No.	DT#2015-08-21-11:15:27	274656	1144-53015	1144-53015	1144-53015	Y0111080910	Y0111080910	k0041300115
39	Value	DT#2015-08-21-11:15:27	AC14 Operating hours	ASi_M1_S1_RTU_UMG103 V L1-N	ASi_M1_S1_R	ASi_M1_S1_	ASi_M1_S3_P1_TP3237	ASi_M1_S3_P1_TP3237	ASi_M1_S6_P1_SD6050 Totalizer
40	Unit	DT#2015-08-21-11:15:27	h:min	V	V	V	°F	°C	I
41	12	DT#2015-08-21-11:15:27	76:19:00	0	0	0	77.3604	25.2	1.02E-01
42	13	DT#2015-08-21-11:40:30	76:21:00	0	0	104.5	77.54041	25.3	1.02E-01
43	14	DT#2015-08-21-11:40:46	76:45:00	228.5706	104.5536	104.5	77.54041	25.3	1.02E-01
44	15	DT#2015-08-21-11:41:19	76:45:00	228.5958	104.4356	104.5	77.72041	25.4	1.02E-01
45	16	DT#2015-08-21-11:45:02	76:49:00	228.5412	104.8114	105	77.72041	25.4	1.02E-01
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