Supplementary instructions

RS232/Ethernet connection

VEGAMET 391/624/625, VEGASCAN 693,
PLICSRADIO C62

Internet

PLC/SPS

e
web
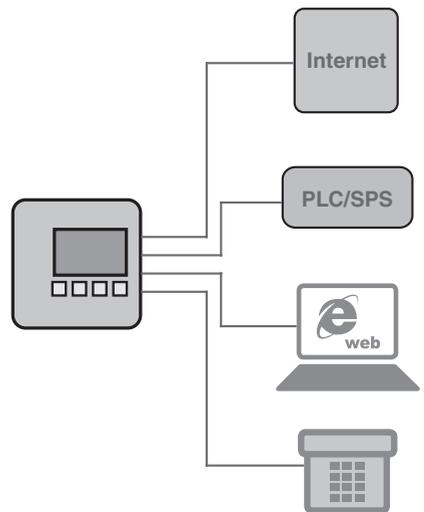
Document ID: 30325

VEGA

Contents

1 Product description

1.1 Configuration

Each instrument can be optionally equipped with an RS232 or an Ethernet interface. These interfaces are permanently integrated and cannot be retrofitted or exchanged. Connection is carried out via an RJ-45 plug on the lower side of the respective instrument.

1.2 Principle of operation

Application area

RS232 interface

The RS232 interface is particularly suitable for easy modem connection for remote enquiry of measured values. For this purpose, external analogue, ISDN and GSM modems can be used.

Ethernet interface

With the Ethernet interface, instruments can be connected directly to an existing PC network. Each instrument is assigned its own IP address at which it can be accessed from anywhere in the network.

1.3 Adjustment

To adjust the instrument, the configuration software PACTware and a suitable instrument driver (DTM) according to FDT standard are required. In addition, the DTMs can be integrated in other frame applications according to FDT standard. As an alternative, adjustment of the basic functions is possible via the integrated indicating and adjustment module.

All device DTMs from VEGA are available as a free-of-charge standard version and as a full version that must be purchased. In the standard version, all functions for complete setup are already included. An assistant for simple project configuration simplifies the adjustment considerably. Saving/printing the project as well as import/export functions are also part of the standard version.

In the full version there is also an extended print function for complete project documentation as well as a save function for measured value and echo curves. In addition, there is a tank calculation program as well as a multiviewer for display and analysis of the saved measured value and echo curves.

The standard version is available as a free-of-charge download under http://www.vega.com. The full version is available on CD from the agency serving you.

The licence regulations allow you to copy a VEGA DTM any number of times and use it on any number of computers, as long as you are using the standard version. The full version must be bought separately per computer and installation.

2 Connection

2.1 Connection requirements

First of all, the connection to power supply and sensor must be carried out as described in the respective operating instructions manual.

2.2 Connection to PC/network/modem

Depending on the application, the connection is made via the optional RS232 or Ethernet interface. Alternatively, the built-in I²C or USB interface can be used for parameter adjustment depending on the instrument type. Details about the interface connection can be found in the respective operating instructions of the instrument.

3 Network settings

For instruments with integrated Ethernet interface, the automatic addressing via DHCP is preset, i.e. the IP address must be assigned by a DHCP server. Generally the instrument is contacted via the Host name. As an alternative, it is also possible to enter a static IP addr. with Subnet mask and optional Gateway addr.

Note:

ℹ The setting/modification of these network parameters will be only taken over, i.e. become effective, after a restart (interruption of power supply and restart).

Enquire of your responsible network administrator the type of addressing wished in your network and, if necessary, further specifications. The following adjustment options and parameters are available:

Dynamic IP-address (DHCP)

In this mode, all necessary parameters are assigned automatically to the signal conditioning instrument by a DHCP server available in the network. These parameters, e.g. the IP address, are thus not known to the user. What is more, they can change whenever the power supply is interrupted. That is why a host name must also be used, via which the instrument can be addressed in the network. Further parameters such as subnet mask, gateway or DNS server address do not have to be entered with automatic addressing. Every instrument is set to DHCP at the factory.

Static (fixed) IP address

If no DHCP server is available (e.g. when connecting directly to a PC via cross-over cable) or automatic addressing is not wanted, the IP addresses are entered manually in each instrument. Your responsible network administrator provides a corresponding IP address with suitable subnet mask.

Subnet mask

The subnet mask together with the IP-address determines which network segment the instrument should belong to.

Standard gateway

A gateway connects individual network segments – data traffic can thus be forwarded to destinations outside the local network segment. Entry of a gateway address is only required when manually assigning an address and for large networks.

Host name

With automatic addressing via DHCP, it is necessary to assign a host name because the IP address is generally not known or can change. By default, the host name consists of the serial number plus "*VEGA*-" in front. Anything can be entered as a host name, for example the name of the measurement loop or the plant. The host name must only include letters and numbers without spaces. Only the hyphen "-" is allowed as a special character. The first character must be a letter. The host name can have a maximum of 16 characters.

DNS server

The DNS server is responsible for assigning the IP address and the host name. This is particularly important with automatic addressing because network devices are accessed via the host name. Entry of a DNS server address is only required with manual addressing

30325-EN-130701

and large networks. Manual entry of a DNS server address is only possible via DTM – it cannot be done via the integrated display and adjustment unit.

● **Information:**
▪ A detailled description of these network parameters is available in the online help of the corresponding DTM.

4 Adjustment with PACTware

4.1 Start PACTware

Start PACTware via the Windows start menu. In the standard setting, it is not necessary to enter a user name and a password. If user name/ password is requested, you can assign various users with different rights and assign a password under the PACTware menu item "*Extras - User administration*".

Information:
> To ensure that all instrument functions are supported, you should always use the latest DTM Collection. Furthermore, not all of the described functions are always included in older firmware versions. For many instruments, the latest instrument software can be downloaded from our homepage. The transfer of the instrument software is carried out via PACTware. A description of the update procedure is also available in the Internet.

4.2 Create a project

Starting point for the adjustment of all types of field devices is the partial or complete imaging of the device network in a PACTware project. This device network can be created automatically or manually and is displayed in the project window.

Create a project automatically

With simple device structures
For simple device structures, for example, a direct connection of the PC via a VEGACONNECT 4 with a VEGA sensor, it is not necessary to create the device network, but as an alternative you can directly click the desktop link *"VEGA-USB-Scan"*. If PACTware is opened via this link, the connected sensor is automatically identified and the suitable DTM appears in the PACTware window in online mode. All PACTware adjustment elements are faded out so that only the information of the DTM relevant for the actual parameter adjustment are visible.

With complex device structures
With complex device structures, the connection is carried out via the VEGA project assistant. The VEGA project assistant is a manufacturer-specific extension module for PACTware. It is part of each VEGA DTM installation package and is installed automatically. By means of the VEGA project assistant, the connected instruments are identified automatically and integrated into the PACTware project. For this, only an online connection to the respective instruments is necessary.

The VEGA project assistant is opened from the PACTware menu bar under "*Project - VEGA project assistant*". The window "*VEGA project assistant*" opens and you only have to select the requested interface for automatic generation of the project. If only one instrument is connected to the selected interface, the DTM parameter adjustment window will be opened automatically and the device data loaded.

You can find further information on how to use the VEGA project assistant in the corresponding online help. The online help can be opened directly from the window "*VEGA project assistant*".

30325-EN-130701
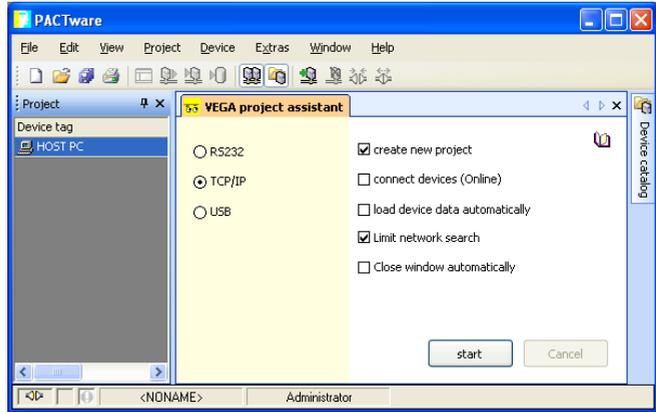
Fig. 1: Project assistant

Create a project manually Even when instruments that are to be parameterised are not yet available or connected, the project can be created manually (offline operation). All DTMs installed on the PC are displayed in the device catalogue. The DTMs usually have the same names as the instruments that can be adjusted with them. For a better overview, the device catalogue is divided into different subgroups. On the upper level, the manufacturers of the respective DTMs appear first. Below, the DTMs are divided into different function categories such as "*Driver*", "*Gateway*" and "*Device*".

To create a project in the project window, paste in the DTMs from the instrument catalogue - one DTM for each actually used instrument. The entry HOST-PC is the starting point for pasting in the DTMs. The requested DTM can be brought over from the instrument catalogue to the project window with a double click or Drag and Drop. In the project window you can change the names of the selected instruments for better differentiation. If the project window or the instrument catalogue are not visible, they can be activated in the menu bar under " *View* ".

4.3   Project examples

Project creation, VEGAMET 391 with sensor

Connection VEGAMET 391 via USB The following example shows a typical project containing a sensor connected to a VEGAMET 391. Communication with VEGAMET 391 is carried out in this example via USB. We recommend using the "*VEGA project assistant*" as this considerably facilitates project creation and helps avoid errors. All participating components are found automatically and integrated into the project.

In case the planning is nevertheless carried out manually, e.g. when creating an offline project, the following DTMs must be added to the project tree:

1. In the device catalogue, first select the "*VEGA USB*" DTM from the category "*Driver*" and transfer it, e.g. by double clicking, to the project window.

2. Select the VEGAMET 391 DTM from the category "*Gateways*" and transfer it into the project window.

3. Select the requested sensor DTM from the category "*Device*" and transfer it to the project window.

4. Now open the DTM by double clicking on the sensor in the project window and carry out the desired settings, see chapter "*Parameter adjustment*".
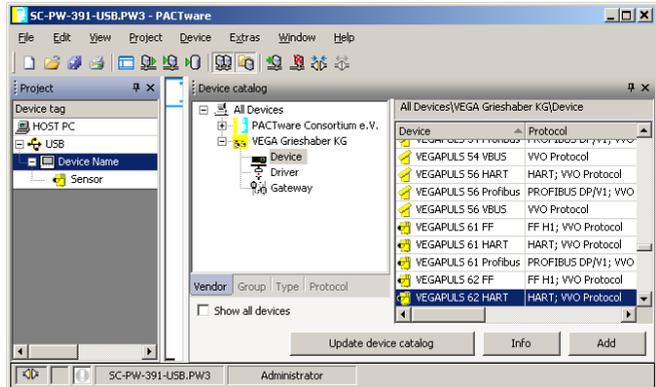
Fig. 2: Project with VEGAPULS

Project creation, VEGAMET 624 with sensor

Connection, VEGAMET 624 via Ethernet

The following example shows a typical project containing a sensor connected to a VEGAMET 624. Communication with VEGAMET 624 is carried out in this example via network and Ethernet. We recommend using the "*VEGA project assistant*" as this considerably facilitates project creation and helps avoid errors. All participating components are found automatically and integrated into the project.

In case the planning is nevertheless carried out manually, e.g. when creating an offline project, the following DTMs must be added to the project tree:

1. In the device catalogue, first select the "*VEGA Ethernet*" DTM from the category "*Driver*" and transfer it, e.g. by double clicking, to the project window.

2. Select the VEGAMET 624 DTM from the category "*Gateways*" and transfer it to the project window.

3. Select the requested sensor DTM from the category "*Device*" and transfer it to the project window.

4. Select the "*VEGA-Ethernet*" DTM in the project tree and select via the right mouse key the menu item "*Additional functions - Change DTM addresses*". Enter in the field "*New address*" the IP address or the Host name the VEGAMET should get later on in real operation.

5. Now open the VEGAMET DTM and sensor DTM by double click-ing and carry out the desired settings, see chapter "*Parameter adjustment*".
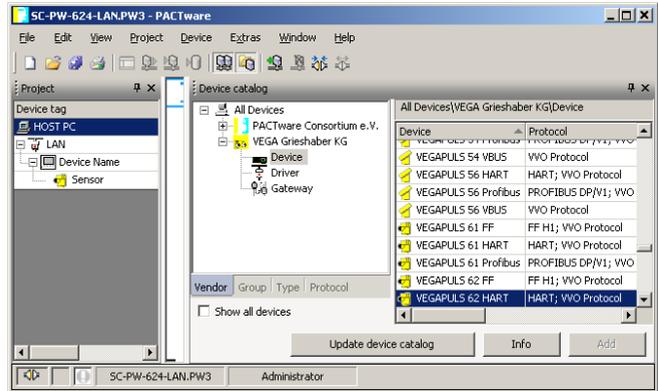
Fig. 3: Project VEGAMET with VEGAPULS

5 Application examples

5.1 Possible application areas

● VMI (Vendor Managed Inventory)
● Stock management of a tank farm via network and web browser
● Automatic transmission of levels, thresholds and fault messages via e-mail or SMS
● Remote enquiry of several tank farms via modem
● Measured value enquiry via Modbus-TCP
● Measured value enquiry via ACSII protocol
● Read out of measured value files via http

5.2 Inventory enquiry via network and browser

Requirement

The stock of a tank farm should be measured and monitored continuously. The measured values should be available to the scheduler and the sales department. In addition, a message should be triggered automatically if a level drops below a certain value.

Solution

One or more signal conditioning instruments with Ethernet interface enquire the respective sensors cyclically. The measured values are processed in the signal conditioning instrument and transferred in the requested form and unit to the integrated web server. The measured values can now be displayed on the computer of every user in the company network. In addition, the required minimum quantity is entered for each vessel. An e-mail is sent to the appropriate person via the company-internal mail system if a level falls below a certain value.
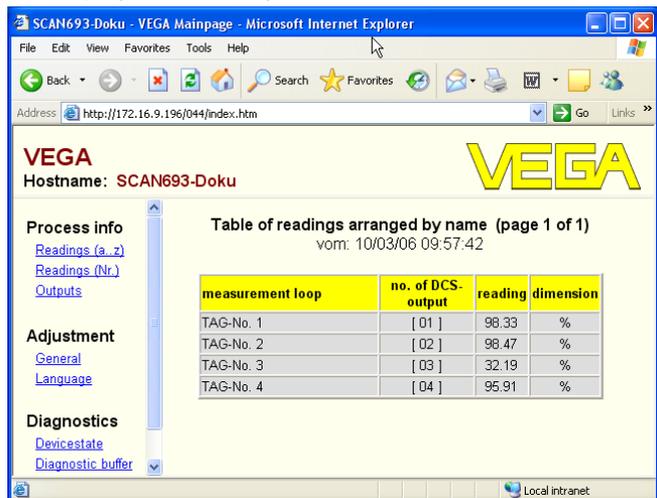
Fig. 4: Measured value indication by means of web browser

Setup

● Connection of the sensors and signal conditioning instrument
● Assignment of the HART sensor addresses (with VEGAMET 625 or VEGASCAN 693)

- Input of IP address/Host name, date/time on the signal conditioning instrument
- Installation of PACTware and DTMs on individual network PC
- Parameter adjustment of the sensors (e.g. false echo memory) via PACTware
- Parameter adjustment of the signal conditioning instrument (adjustment, scaling, linearization) via PACTware
- Setup of the web and e-mail server
- Indication of measured values via web browser by entering the Host name/IP address of the signal conditioning instrument

5.3 Inventory enquiry/VMI via WEB-VV

Requirement

A supplier would like to keep track of the tank stock levels of his customers and replenish them on his own whenever necessary. Via a display that is updated several times daily, he has access to the level data of the previous days or weeks. The supplier can thus assess the requirements/consumption of his customers and plan his deliveries accordingly. This allows him to do anticipatory purchasing and also better utilize the capacity of his truck fleet. In addition, a message should be sent if the level in any tank falls below a certain predefined minimum value. Using this method, the supplier can always guarantee his customers a sufficient supply of raw materials for production without their having to bother with purchasing and ordering. And he has the added benefit of long-term customer retention and continuous orders.
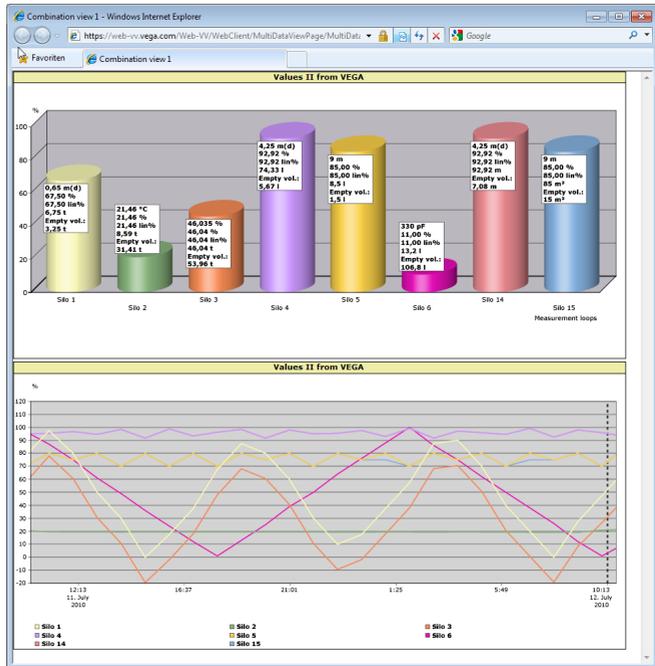
Fig. 5: Remote enquiry via WEB-VV

Solution

A signal conditioning instrument with serial interface and modem (conventional telephone network or GSM) is installed at each customer. The measured values are transmitted automatically from each signal conditioning instrument to the central WEB-VV server at VEGA. As an alternative, the measured value transmission can be also carried out via the Ethernet interface and the existing company network. The measured values can now be retrieved worldwide quickly and easily by any number of (authorized) persons via Internet and web browser. The current measured values as well as the history data are available as a line graph. A certain alarm threshold can be defined for each measurement loop. If a level falls below a predetermined value, an e-mail or SMS can be sent to certain persons.

6 PC/DCS values

6.1 General information

PC/DCS outputs are used as digital outputs for transmission of measured value information. The data can be transmitted to a superordinate PC, DCS or processing system via the RS232/Ethernet interface. The values can be sent e.g. as e-mail or read out via Modbus TCP in case of an existing Ethernet interface. The HTML pages of the signal conditioning instrument also show the measured values of the PC/DCS outputs. The adjustment of the data format and the reference value is carried out with PACTware and the corresponding DTM. In the parameter adjustment page "*PC/DCS*" the reference value and the data format are selected; in addition, the option "*In case of error: transmit error code instead of measured value*" can be activated.

Reference value

With the reference value you determine which measured value is used as input signal for the PC/DCS output. The following reference values are available depending on the instrument:

● Sensor value
● Percent
● Lin. percent
● Scaled
● Totalizer

Data format

With "*Data format*", the format of the PC/DCS value is determined. Here you determine how many decimal positions will be transmitted. This setting is important, e.g. with Modbus-TCP (filing of the measured value as 2 Byte short). The PC/DCS value is then transmitted in the integer format, i.e. the value must be within the range of -32767 and +32767.

Example: The sensor value of a pressure transmitter should be transmitted as PC/DCS value. The meauring range of the sensor is between -0.5 bar and +0.5 bar, the value should be transmitted with two positions after the decimal point. The following settings must be carried out: The sensor value must be selected as "*Basic meas. value*" and the selection #.## as "*Data format*". With these settings, the sensor value -0.5 bar is transmitted as PC/DCS value -0.5 bar.

Fault

If " *In case of error: send error code instead of measured value* " is activated, the number of the error code is sent instead of the measured value. These numbers correspond to the numbers of the instrument status.

Example: With error E008, value 8 is transmitted instead of the measured value.

7 Measured value enquiry via Web browser/ http

7.1 General information

With an individual web browser (e.g. Internet Explorer) all measured values available in the signal conditioning instrument can be displayed in the requested form and unit. The measured value indication is carried out as HTML chart. Within a company network the enquiry is made via Ethernet. If a remote enquiry is necessary, a signal conditioning instrument with RS232 interface and connected modem is used.

The measured value enquiry can be also carried out via an individual http-capable software, e.g. Excel.

7.2 Access protection

To prevent unauthorised access to the measured values, the signal conditioning instrument can be provided with access protection. Use the web browser and enter the host name or the IP address of the instrument. Under "*Settings - General*" you can define the user name and the password and activate the access protection. When the page is called up, the default user name and password are asked for first of all. Enter "*VEGA*" for user name and password. Now you can activate the access protection for measured value enquiry and enter your own password.

The access protection applies also to measured value and instrument trend files which can be called up via http.

> **Note:**
> This access protection only prevents measured value enquiry via web browser. If the configuration of the signal conditioning instrument also needs to be protected against unauthorized access, a second access protection is available. This protection is configured with PACTware or the respective DTM.

7.3 Measured value enquiry via web browser/ Ethernet

Prerequisites

● Signal conditioning instrument with Ethernet interface
● PACTware with suitable device DTM
● Ethernet connection at the site of the signal conditioning instrument
● Windows-PC with Ethernet connection and web browser

Setup

First of all, enter the host name or IP address and subnet mask directly via the adjustment unit of the signal conditioning instrument under "*Device settings*" (see operating instructions manual of the respective instrument). Briefly interrupt the supply voltage, the instrument can then be accessed anywhere in the network via the host name and IP address. Install the configuration software PACTware with the appropriate DTMs for your instrument on any network PC. Now carry out the parameter adjustment of the individual measurement loops or

sensors as described in the respective operating instructions manual. Further information is available in chapter "*Parameter adjustment with PACTware*" as well as in the online help of PACTware or the DTM.

Measured value indication

Open the web browser (e.g. Internet Explorer) on any PC in your network. Enter the host name or the IP address in the field called "*Address*" or "*URL*". Now the HTML chart generated in the signal conditioning instrument is displayed with all measured values in your browser window. This measured value enquiry can be carried out on any number of PCs in your network.
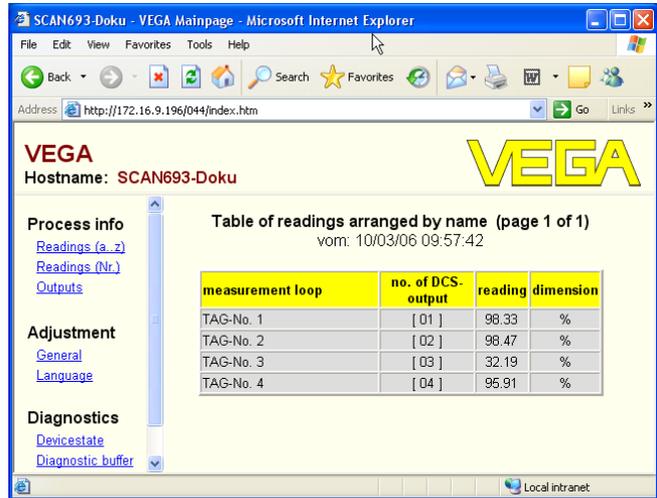
Fig. 6: Measured value indication by means of Internet Explorer

7.4 Measured value enquiry via web browser/ RS232

Measured value enquiry via RS232 interface and PPP (Point to Point Protocol) is used if no internal company network or other direct connection is available. PPP is a transmission standard for serial connection between two computers (points). A dial-up line (telephone line) with a modem is usually used for this.

Measured value enquiry by means of web browser is a dial-in connection. The signal conditioning instrument accepts an incoming call and reacts to the calling host like an Internet Service Provider (ISP). This allows data exchange with the signal conditioning instrument via http. The dial-up connection makes it possible to access the HTML pages of the signal conditioning instrument with a web browser.

If a telephone connection is not available, a GSM wireless modem with RS232 interface can also be used. In this case, a GSM mobile phone contract with the option of data transmission is required. Make sure that your location is sufficiently covered by the network of the mobile network operator. In addition, the PIN of the SIM card used must be deactivated.

Prerequisites

- Signal conditioning instrument with RS232 interface
- PACTware with suitable device DTM
- Modem with RS232 interface
- Telephone connection at the location of the signal conditioning instrument (not necessary with GSM modem)
- Windows PC with modem, telephone connection and web browser (e.g. Internet Explorer)

Connection

Connect the signal conditioning instrument to the PC with PACTware via the RS232 interface (see chapter "*Connection*"). After the configuration, you can connect the modem instead of the PC. If changes are necessary later, you can access the instrument remotely via modem and carry out your settings.

Configuration of the RS232 interface of the signal conditioning instrument
Start PACTware with the suitable DTM and carry out the following configuration.

Communication protocol

With this setting, you define which mode the RS232 interface should operate in. The following options are available:

- **VVO protocol**: Direct serial connection between signal conditioning instrument and PC for parameter adjustment and enquiry (e.g. with PACTware and DTM)
- **PPP**: Dial-up connection between signal conditioning instrument and modem for independent transmission of e-mails (dial-out connection) or enquiry via web browser (dial-in connection)
- **ASCII protocol**: Direct serial connection between signal conditioning instrument and PC for enquiry with terminal programs, e.g. Hyperterminal

1. Select the option "*PPP*" for connection of a modem for measured value enquiry via web browser.

Modem initialisation

When connecting a modem, you should switch on this option so that it will be provided with parameters necessary for data transmission.

Point to Point Protocol

The Point to Point Protocol (PPP) enables the transmission of LAN protocols (e.g. http) via point-to-point connection. PPP connections are e.g.:

- Switched connections via the analogue telephone network with analogue, ISDN and GSM modem
- Standard connections

2. When connecting a modem for measured value enquiry via web browser, select under "*Dialing direction*" the option "*Dial-in (incoming connections)*".

3. Select in the navigation section "*Dial-in*" and enter the following data under "*Settings for ISP emulation*":

User name

4. Enter here an individual user name for your connection. This name must be used later on for the dial-up connection.

30325-EN-130701

Password/Password

5. Enter here an individual password for your connection. This password must be used later on for the dial-up connection.

IP address

6. Enter the preferred IP address. In general you can use the standard setting "*192.168.200.200*".

Host name

7. Enter an individual name in the provided field.

Create a dial-up connection on the PC

First of all create a dial-up connection. Under Windows 2000/Xp there is the "Assistent for new connection" which you can reach via "Start - Settings - Network connection". Proceed in the way you are creating a connection to the Internet via modem. Enter under Call number the telephone number of the local modem. Enter under User name/ Password the specifications already used for the signal conditioning instrument. Adjust a fix baud rate of 9600.

Measured value indication

Now start your dial-up connection and establish the communication to the signal conditioning instrument.

Open the web browser (e.g. Internet Explorer) and enter the previously defined IP address in the field called "*Address*" or "*URL*". Now the HTML chart generated in the signal conditioning instrument is now displayed with all measured value in your browser window.
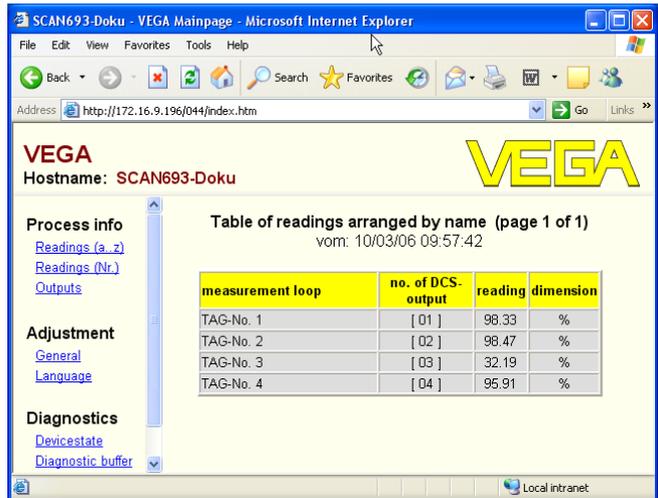
Fig. 7: Measured value indication by means of Internet Explorer

7.5 Measured value enquiry via http software

To enquire measured value files, an individual http capable software can be used. With Excel, the measured values can be readout automatically e.g. in an individual interval and saved as chart. Different formats of the measured value and status files are available. A detailed description of these file types is available in chapter "*Measured value/ Status files*".

Prerequisites

● Signal conditioning instrument with Ethernet interface

- PACTware with suitable device DTM
- Ethernet connection at the site of the signal conditioning instrument
- IP address/Subnet mask for each signal conditioning instrument suitable for the network
- Windows-PC with Ethernet connection and http-capable software

Measured value files

The PC/DCS values can be retrieved in four different file formats via http. Use the following command: *http://ip-address or Host name/file name*, e.g. *http://192.168.200.200/val.htm*.

- **val.txt** (text file)
- **val.csv** (CSV file)
- **val.htm** (HTML file)
- **val.xml** (XML file)

Status files

In addition to the measured value file there is also a status file with status, relay and current output information. For retrieval via http, use the following command: *http://ip-address or Host name/file name*, e.g. *http://192.168.200.200/state.htm*.

- **state.txt** (text file)
- **state.csv** (CSV file)
- **state.htm** (HTML file)
- **state.xml** (XML file)

8 Measured value transmission via e-mail

8.1 General information

Via the integrated e-mail server, the current measured values can be sent to anyone at individually defined times or intervals. A message can also be sent via e-mail in case a certain level is exceeded or underrun. Status-controlled E-mail transmission is also possible, e.g. in case of a fault signal.

There are two different ways to send e-mails:

● Transmission via internal company network and mail server (option Ethernet interface)
● Transmission via dial-up connection with modem and external Internet/e-mail provider (option RS232 interface)

Both options and their different application areas are explained more detailed in the following subchapters and the online help.

Clock

With the time-controlled transmission of e-mails, the current time must be available. For this purpose, there is a buffered clock in the signal conditioning instrument. Via the DTM menu item "*Date/Time*", you can set the date and time. Via the button "*Accept PC system time*", the current PC system time and the date are taken over in the fields "*Time*" and "*Date*". Via the button "*Write data in device*", the time set in the DTM is written into the device. Both buttons are only available in online mode.

> **Note:**
> In case of power loss, the time is backed up by battery for a certain period (at least a few days, depending on instrument type); in case of a long interruption of the power supply, the time must be reset! For details on the exact bridging time, please see the respective instrument manual.

Event list

The entries in the parameter page "*Event list*" determine which events should trigger a message by e-mail. It is also defined to which addressee the message should be sent and which data should be included in the message. When creating this event list, an assistant for easy configuration is started automatically taken over the necessary enquiries.

Event type

Under "*Event type*" you determine which events should trigger e-mail messages.

● **Time-controlled:** E-mails are sent at a certain time or in fixed intervals.
● **Measured value controlled:** E-mails are sent due to a predefined measured value, i.e. when the predefined measured value is exceeded or decreased.
● **Status-controlled:** E-mails are sent if an error status occurs, i.e. in case of a failure message on the signal conditioning instrument or one of the measurement loops.

Content of the message

Under "*Contents of messages*" you determine the content of the message.

● **Measured value:** The actual measured values are sent in text, CSV, HTML or XML format. A detailled description of the file types is available in chapter "*Measured value/Status files*".

● **Visual VEGA file (only with VEGAMET/VEGASCAN series 600):** The actual measured values are sent in a VEGA-specific format. These mails can be read in automatically by the software Visual VEGA.

● **Device trend file (only with VEGAMET/VEGASCAN):** If the trend recording was activated in the signal conditioning instrument, a file with this recording is sent. You find further information in chapter "*Device trend*" and in the online help.

List of the addressees

In the event list, e-mail addresses of up to 15 recipients can be entered. The column "*active*" marks the list entries that are currently activated. The signal conditioning instrument sends an e-mail in case of a pertinent event. In the context menu you have the option of sending a test mail. The format and configuration of the test mail corresponds to that of a real mail which is sent if the event occurs. Thus, you can test in advance if the e-mail contains the requested information and if it will be sent to the correct recipient. With "*Info*" you get an overview of the settings for the selected event list entry.

8.2 E-mail transmission via network and mail server

This variant is recommended if the signal conditioning instrument is integrated in a company network and access to a company internal mail server should be established. In such case, the e-mail configuration can be executed quickly and easily. Another advantage is its high reliability, because the mail system is also available for other communication and is maintained accordingly.

If a DSL connection with DSL router is available, there is also a network. An external e-mail provider can also be used instead of the e-mail server.

Prerequisites:
● Signal conditioning instrument with Ethernet interface
● Adjustment software frame application, e.g. PACTware and device-DTM
● Free Ethernet connection at the location of the signal conditioning instrument
● E-mail address to send measured values
● Name or IP address of the inbox and outbox server (POP/SMTP) as well as user name/password for authentication.
● E-mail address(es) of the requested measured value addressees

First of all enter the host name or IP address and subnet mask directly via the adjustment unit of the signal conditioning instrument under "*Device settings*" (see operating instructions manual of the respective instrument). Briefly interrupt the supply voltage, the instrument can

then be reached from everywhere in the network via its Host name or the IP address.

The system administrator must create an e-mail address on the mail server from which the measured values, messages and failures are sent. The names or IP addresses of the mail server for inbox and outbox must also be provided by the system administrator. If user name and password are required by the mail server, these must also be entered.

> **Note:**
> Some mail servers are configured in such a way that the password expires after a certain and must be reedited. If possible, have this function deactivated otherwise you have to reedit the passwords in the set cycle and transfer them to the signal conditioning instrument.

Configuration of the e-mail account

Name (alias)

Here you can enter a name which should be displayed instead of the e-mail address. The name is for a better readability at the addressee because the real account name is using from time to time a not very meaningful expression.

E-mail address

The e-mail address constitutes the actual account name that is set up for the signal conditioning instrument on the mail server. If no alias is given, this address is shown to the addressee as the sender of the e-mail.

Answering address

Since the signal conditioning instrument cannot receive e-mails, there is the possibility to state an alternative e-mail address. An answering mail is sent to this address if the addressee is answering to the e-mail of the signal conditioning instrument.

Configuration of the e-mail server

Address of the outbox server (SMTP)

Enter the name of the outbox server provided by the system administrator. Alternatively, its IP address can also be entered.

Address of the inbox server (POP)

Enter the name of the inbox server provided by the system administrator. As an alternative, its IP address can be entered.

User name/Password

Depending on the configuration of the mail server, a user name and password can be prompted for by the inbox as well as outbox server. Enter, if necessary, the user name and password provided by the system administrator.

8.3   E-mail transmission via modem/Dial-up

With this alternative, the e-mail transmission is carried out via a modem and dial-up connection (PPP dial-out connection, see also chapter "*Measured value enquiry via RS232*"). For this, an external Internet and e-mail provider is required - registration with the provider in advance is of course necessary. This solution should be only used no company network or mail server is available, because setup is more detailed and operational reliability not as high. Furthermore

a telephone connection with direct outward dialing as well as an Internet/e-mail provider are requisites, which will create additional costs.

If a telephone connection is not available or possible, a GSM wireless modem with RS 232 interface can be also used. In this case, a GSM mobile phone contract with the option of data transmission is required. Make sure that your location is sufficiently covered by the network of the mobile network operator. Also the PIN of the SIM card used must be deactivated. Please note that the dial-in numbers to the Internet provider are usually not the same as those for the conventional telephone network.

Prerequisites:
- Signal conditioning instrument with RS232 interface
- Adjustment software frame application, e.g. PACTware and device-DTM
- VEGACONNECT for parameter adjustment of the signal conditioning instrument (only with series 600)
- Modem with RS232 interface
- Available telephone connection with direct outward dialing at the location of the signal conditioning instrument
- External Internet provider (e.g. T-Online, MSN) with user name/password for authentication
- External e-mail account/address for transmission of measured values with name of the inbox and outbox server (POP/SMTP) as well as user name/password for authentification
- E-mail address(es) of the requested measured value addressees

Connection

Connect the signal conditioning instrument via the RS232 interface to the PC with PACTware (see chapter "*Connection*"). After the configuration, you can connect the modem instead of the PC. For probable later changes, it is now possible to address the instrument remotely via modem and carry out your settings.

To adjust the parameters of the signal conditioning instrument and at the same time check the e-mail transmission, an additional connection is recommended. For this purpose, use for series 600 a VEGACONNECT 4 and the I^2C interface on the instrument front (see chapter "*Connection*"). This way you can carry out the parameter adjustment of the instrument via the I^2C interface and simultaneously test the e-mail transmission via modem and RS232. With VEGAMET 391 you can use the built-in USB interface.

Configuration of the RS232 interface

Communication protocol

With this setting, you define which mode the RS232 interface should operate in. The following options are available:

- **VVO protocol**: Direct serial connection between signal conditioning instrument and PC for parameter adjustment and enquiry (e.g. with PACTware and DTM)
- **PPP**: Dial-up connection between signal conditioning instrument and modem for independent transmission of e-mails (dial-out connection) or enquiry via web browser (dial-in connection)

● **ASCII protocol**: Direct serial connection between signal conditioning instrument and PC for enquiry with terminal programs, e.g. Hyperterminal

1. When connecting a modem for e-mail transmission, choose the option "*PPP*".

Modem initialisation When connecting a modem, you should switch on this option so that it will be provided with parameters necessary for data transmission.

Point to Point Protocol The Point to Point Protocol (PPP) enables the transmission of LAN protocols (e.g. http) via point-to-point connection. PPP connections are e.g.:

● Switched connections via the analogue telephone network with analogue, ISDN and GSM modem
● Standard connections

2. For sending e-mails select under "*Dialing directions*" the option "*Dial-out (outgoing connections)*".

3. Enter under "*Access data for connection to the Internet service provider*" the following data which you get from your Internet provider:

Telephone connection to ISP 4. Enter the dial-in number of your Internet access.

Redialling 5. Enter the number of redialing attempts if the connection cannot be reached or is occupied.

User name 6. Enter the user name for your Internet access.

Password/Password 7. Enter the password for your Internet access.

The field "*Host IP address for ISP emulation*" remains empty.

Configuration of the e-mail account

Name (alias) Here you can enter a name which should be displayed instead of the e-mail address. The name is for a better readability at the addressee because the real account name is using from time to time a not very meaningful expression.

E-mail address The e-mail address constitutes the actual account name that is set up for the signal conditioning instrument with your e-mail provider. If no alias is given, this address is shown to the addressee as the sender of the e-mail.

Answering address Since the signal conditioning instrument cannot receive e-mails, there is the possibility to state an alternative e-mail address. An answering mail is sent to this address if the addressee is answering to the e-mail of the signal conditioning instrument.

Configuration of the e-mail server

Address of the outbox server (SMTP) Enter the name of the outbox server provided by the e-mail provider.

Address of the inbox server (POP) Enter the name of the inbox server provided by the e-mail provider.

User name/Password Enter the user name and the corresponding password for the inbox server provided by the e-mail provider. Many providers also request an authentification for the outbox server. Depending on the provider, the same access data may also be intended for the inbox server. In principle, completely different access data may also be required.

9 Measured value transmission to a WEB-VV server

9.1 Prerequisites

Signal conditioning instruments

The measured values dermined by the sensors are further processed by the signal conditioning instrument and can be transferred to a WEB-VV server. For this purpose, one of the following signal conditioning instruments, including one of the optional interfaces (RS232 or Ethernet), is required.

- VEGAMET 391/624/625
- VEGASCAN 693
- PLICSRADIO C62

Connection types

The transmission of readings is generally carried out via an Internet connection, independent of the interface type or access mode. The connection alternatives can be subdivided into the following three groups:

- Signal conditioning instrument with RS232 interface and analogue/GSM/GPRS modem
- Signal conditioning instrument with Ethernet interface and MoRoS (ModemRouterSwitch)
- Signal conditioning instrument with Ethernet interface directly connected to the company network

The selection of the most suitable connection alternative is dependent on the local conditions and the frequency of the measured value transmission (refresh rate). If, for example, no telephone connection or network with Internet connection is available, the transmission can only be carried out via a wireless modem. This of course requires that sufficient network coverage by a mobile communications provider exists at the site. When transmission is carried out via GSM, charges are usually based on the required time. For example, if one measured value is transmitted every hour, sizeable connection costs will be incurred every month. If GPRS is available, this transmission variant should be chosen – the costs are considerably lower because the charges are based on the transmitted volume, usually via a flat rate.

9.2 Signal conditioning instrument (RS232) with analogue/GSM/GPRS modem

This alternative is used when only one signal conditioning instrument has to be connected to WEB-VV and no company network with Internet access is available. The signal conditioning instrument must be equipped with the RS232 interface option.

The option of remote parameterisation is also available, i.e., the signal conditioning instrument and the sensors can be accessed from outside the system. This allows settings for remote transmission as well as parameterisation of the signal conditioning instrument/sensor to be carried out or changed from a distant location.

The choice of modem depends on the local conditions. If an analogue telephone connection is available on site, an analogue modem (PSTN

modem) is the simplest choice. Alternatively, when there is no telephone connection and a wireless modem is used, the data transmission is carried out via GSM or GPRS. For cost reasons transmission via GPRS is recommended, as charges are based on the transmitted volume.

The following modems can be used for measured value transmission:

● Phoenix Contact PSI-Data/Fax modem (analogue telephone network), art. no.: *MODEM.JX*
● Siemens TC35i (GSM radio modem), art. no.: *MODEM.FX*
● Insys GPRS 5.0 serial (GPRS radio modem), art. no.: *MODEM.GX*

To access the Internet, access data from an Internet service provider (ISP) must be obtained. These data are entered into the signal conditioning instrument via PACTware. When GSM or GPRS is implemented, a SIM card is additionally required.

Signal conditioning instrument with analogue modem

Prerequisites for setup:

● PC with PACTware and suitable DTM as well as access to the signal conditioning instrument via VEGACONNECT or USB
● Access data from an Internet provider (ISP) must exist (call by call or contractual relationship)
● Analogue telephone connection with direct outward dialing (note: dialout number "0" as prefix may be necessary)
● No telephone number blocking for the number used to call the ISP

Start PACTware and make a connection to the signal conditioning instrument. Select the menu item "*Instrument settings - RS232 interface*". Carry out the following steps as shown in the following illustrations.

RS232 configuration

Enter the parameters for the RS232 interface as shown.
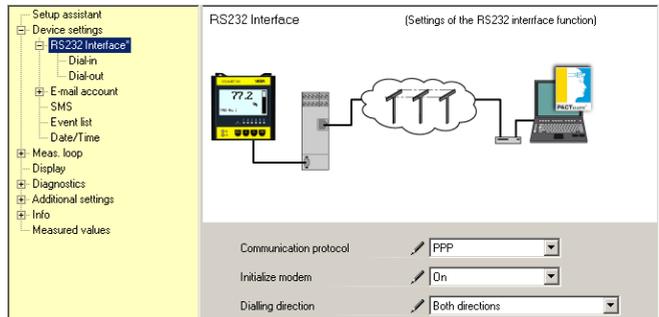
Fig. 8: RS232 configuration

Dial-in connection

Enter the parameters for the dial-in connection as shown. These data make access from outside possible (remote parameterisation). The password is "*webvv*".
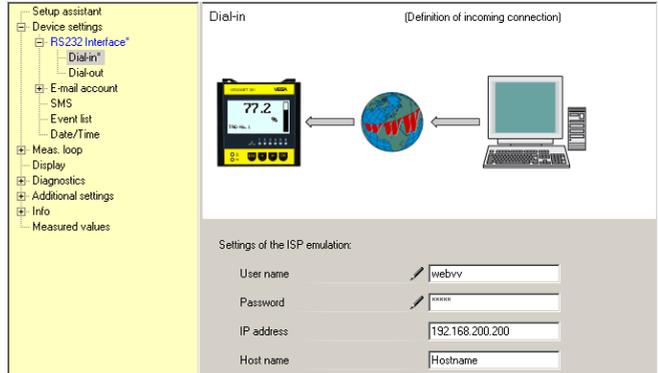
Fig. 9: Dial-in connection

Dial-out connection

Enter here the access data you received from your Internet provider. Do not enter anything in the entry field "*APN*".
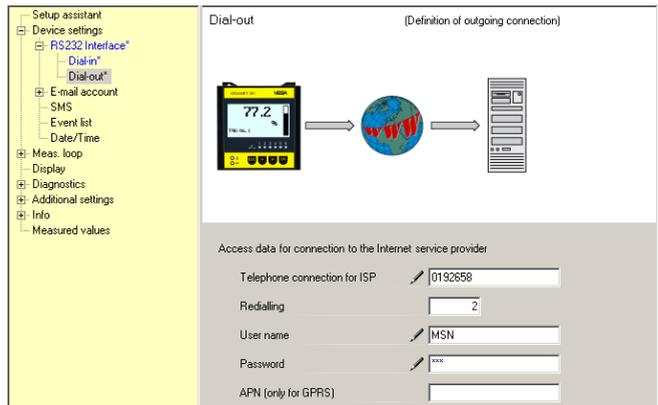
Fig. 10: Dial-out connection

Measured value transmission

Define a WEB-VV event as described in chapter "*Set up measured value transmission*".

Signal conditioning instrument with GSM modem

Prerequisites for setup:

- PC with PACTware and suitable DTM as well as access to the signal conditioning instrument via VEGACONNECT or USB
- Modem location with sufficient wireless coverage
- SIM card with activated data transmission (data card CSD)
- PIN of SIM card deactivated
- Internet access data from the mobile communications provider must be known

Start PACTware and make a connection to the signal conditioning instrument. Select the menu item "*Instrument settings - RS232 interface* ". Carry out the following steps as shown in the following illustrations.

RS232 configuration

Enter the parameters for the RS232 interface as shown.
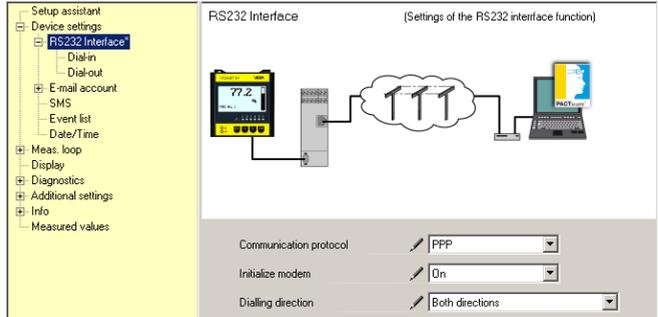
Fig. 11: RS232 configuration

Dial-in connection

Enter the parameters for the dial-in connection as shown. These data make access from the outside possible (remote parameterisation). The password is "*webvv*".
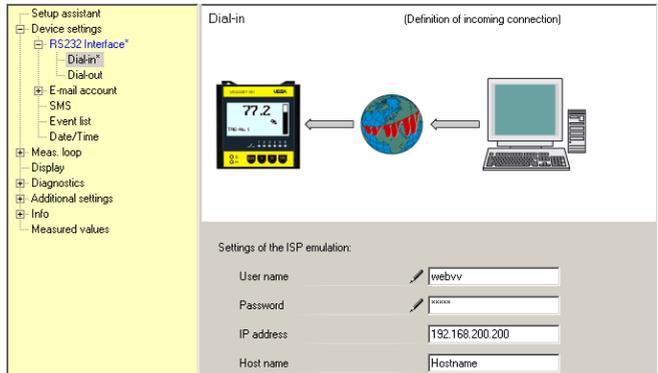
Fig. 12: Dial-in connection

Dial-out connection

Enter here the access data you received from your Internet provider. Nothing may be entered in the entry field "*APN*".
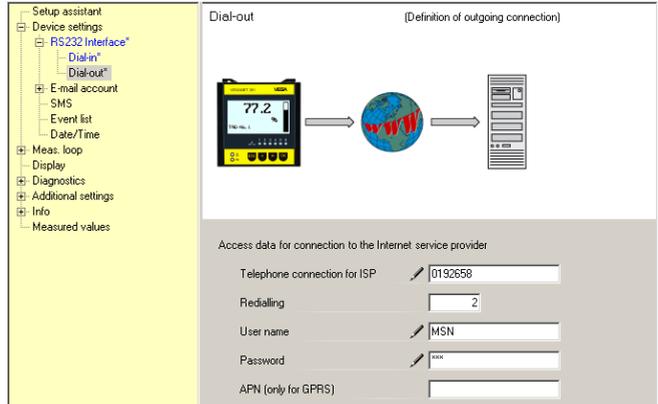
Fig. 13: Dial-out connection

Measured value transmission
Define a WEB-VV event as described in chapter "*Set up measured value transmission*".

Signal conditioning instrument with GPRS modem

Prerequisites for setup:

- PC with PACTware and suitable DTM as well as access to the signal conditioning instrument via VEGACONNECT or USB
- Modem location with sufficient wireless coverage
- SIM card with activated data transmission (data card CSD+GPRS)
- PIN of SIM card deactivated
- Internet access data with APN (Access Point Name) from the mobile communications provider must be known.
- To keep transmission costs low, we recommend using a pure data rate (M2M) with low data block rounding (1 kB)

Start PACTware and make a connection to the signal conditioning instrument. Select the menu item "*Instrument settings - RS232 interface*". Carry out the following steps as shown in the following illustrations.

RS232 configuration
Enter the parameters for the RS232 interface as shown.

Fig. 14: RS232 configuration

Dial-in connection

Enter the parameters for the dial-in connection as shown. These data make access from the outside possible (remote parameterisation).
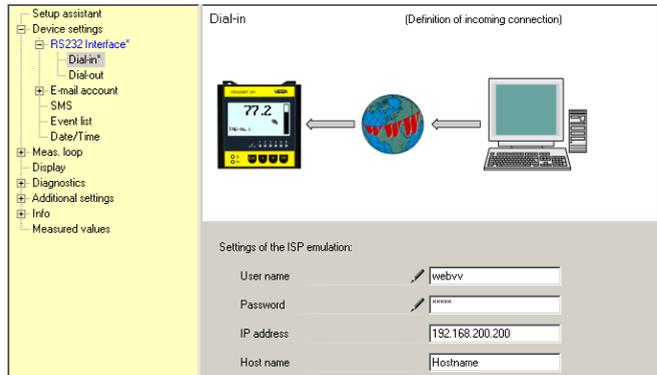
Fig. 15: Dial-in connection

Dial-out connection

Enter here the access data from your Internet provider.
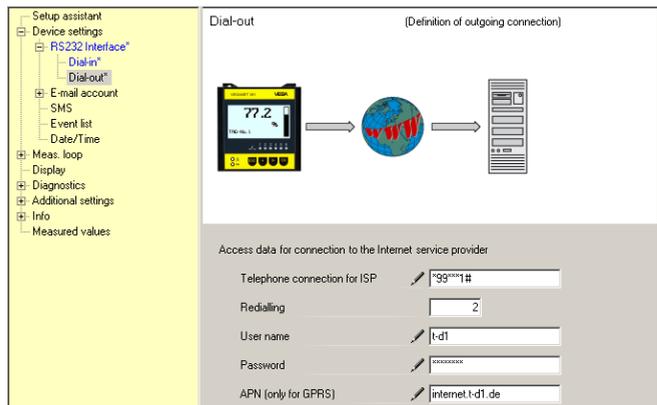
Fig. 16: Dial-out connection

Measured value transmission

Define a WEB-VV event as described in chapter "*Set up measured value transmission*".

9.3 Signal conditioning instrument (Ethernet) with MoRoS

This alternative is used if several signal conditioning instruments have to be connected to WEB-VV at the same site and no company network with Internet access is available. The signal conditioning instruments must be equipped with an Ethernet interface option.

The option of remote parameterisation is also available, i.e., the signal conditioning instrument and the sensors can be accessed from outside the system. This allows settings for remote transmission as well

30325-EN-130701

as parameterisation of the signal conditioning instrument/sensor to be carried out or changed from a distant location.

A MoRoS with integrated modem is used for connection to the Internet. The built-in router takes over dialing into the Internet. The device also contains a 4-port switch for direct connection to up to four signal conditioning instruments with Ethernet connection. More signal conditioning instruments can be connected via an additional external switch.

The choice of the modem integrated in the MoRoS depends on the local conditions. If a telephone connection (analogue or ISDN) is available on site, the analogue (PSTN) or ISDN modem is the simplest choice. Alternatively, a wireless modem is used when no telephone connection exists; the data transmission is carried out in this case via GSM or GPRS. For cost reasons transmission via GPRS is recommended, as charges are based on the transmitted volume.

The following MoRoS versions are available:

- MoRoS with PSTN modem, art. no.: *ROUTER.AXX*
- MoRoS with ISDN modem, art. no.: *ROUTER.IXX*
- MoRoS with GSM/GPRS modem, art. no.: *ROUTER.GXX*

To access the Internet, access data from an Internet service provider (ISP) must be obtained. These data are entered via Web browser into the MoRoS. A SIM card is additionally required when GSM or GPRS is implemented.

The MoRoS has the standard IP address 192.168.1.1. Since it is an independent network that is involved here, this address should not be changed. Every connected signal conditioning instrument must be assigned a unique address from the same address range, e.g. 192.168.1.2 for the first signal conditioning instrument, 192.168.1.3 for the second, etc.

Signal conditioning instrument with MoRoS/PSTN/ISDN modem

Prerequisites for setup:

- PC with PACTware and suitable DTM as well as access to the signal conditioning instrument via VEGACONNECT, USB or LAN
- Telephone connection (analogue or ISDN) with direct outward dialing (note: dialout number "0" as prefix may be necessary).
- Access data from an Internet provider must exist (call by call or contractual relationship)
- No telephone number blocking for the number used to call the ISP

Start PACTware and make a connection to the signal conditioning instrument. Select the menu item "*Instrument settings - LAN/Internet*". Carry out the following steps as shown in the following illustrations.

IP addressing

Give every signal conditioning instrument a unique IP address from the address range of the MoRoS (192.168.1. xxx); the address of the MoRoS itself (192.168.1.1) may be not used. The subnet mask remains unchanged (255.255.255.0). Type in the IP address of the MoRoS under Standard gateway.

VEGA
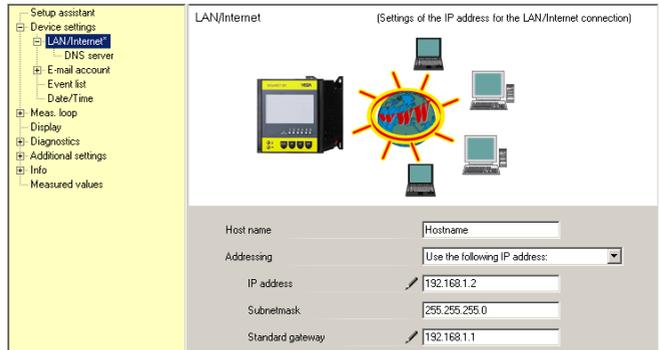
Fig. 17: IP addressing

DNS addressing

Enter the IP address of the MoRoS under "*Instrument settings - DNS Server*".

Fig. 18: DNS addressing

MoRoS setup

The access data of the ISP must be written into the MoRoS. You can find the procedure in chapter "*Commissioning the MoRoS*" as well as in the operating instructions manual.

Measured value transmission

Define a WEB-VV event as described in chapter "*Set up measured value transmission*".

Signal conditioning instrument with MoRoS/GPRS modem

Prerequisites for setup:

● PC with PACTware and suitable DTM as well as access to the signal conditioning instrument via VEGACONNECT, USB or LAN
● Modem location with sufficient wireless coverage
● SIM card with activated data transmission (data card CSD+GPRS)
● PIN of SIM card deactivated
● Internet access data with APN (Access Point Name) from the mobile communications provider must be known.

● To keep transmission costs low, we recommend using a pure data rate (M2M) with low data block rounding (1 kB)

Start PACTware and make a connection to the signal conditioning instrument. Select the menu item "*Instrument settings - LAN/Internet*". Carry out the following steps as shown in the following illustrations.

IP addressing

Give every signal conditioning instrument a unique IP address from the address range of the MoRoS (192.168.1. xxx); the address of the MoRoS itself (192.168.1.1) may be not used. The subnet mask remains unchanged (255.255.255.0). Type in the IP address of the MoRoS under Standard gateway.

Fig. 19: IP addressing

DNS addressing

Enter the IP address of the MoRoS under "*Instrument settings - DNS Server*".
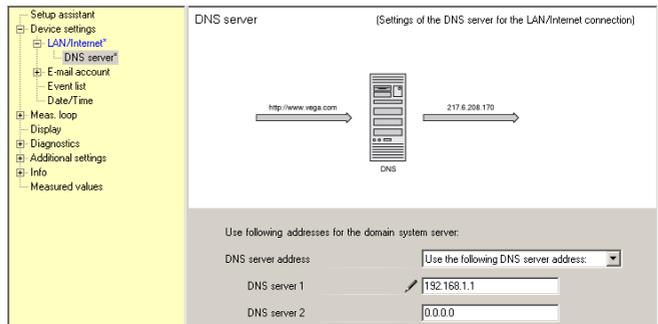
Fig. 20: DNS addressing

MoRoS setup

The access data of the mobile telecommunications provider must be written into the MoRoS. You can find the procedure in chapter "*Commissioning the MoRoS*" as well as in the operating instructions manual.

Measured value transmission

Define a WEB-VV event as described in chapter "*Set up measured value transmission*".

9.4 Signal conditioning instrument (Ethernet) in LAN

This alternative is used if a company network with internet access is available. Any number of signal conditioning instruments can be connected to WEB-VV. The signal conditioning instruments must be equipped with the Ethernet interface option. When addressing is done via DHCP, a suitable Host name should be assigned. As an alternative, a unique IP address suitable to the network can be assigned. You can find further information in chapter "*Network settings*".

Prerequisites for setup:

- PC with PACTware and suitable DTM as well as access to the signal conditioning instrument via VEGACONNECT or LAN
- Subnet mask, standard gateway and DNS server dof the company network
- http port 80 must be activated for an Internet connection

Start PACTware and make a connection to the signal conditioning instrument. Select the menu item "*Instrument settings - LAN/Internet*". Carry out the following steps as shown in the following illustrations.

1. Give every signal conditioning instrument a unique IP address that you have received from your responsible network administrator. The subnet mask matching your network and the standard gateway also come from your network administrator. Alternatively, you can use the DHCP function if a DHCP server is available in your network.
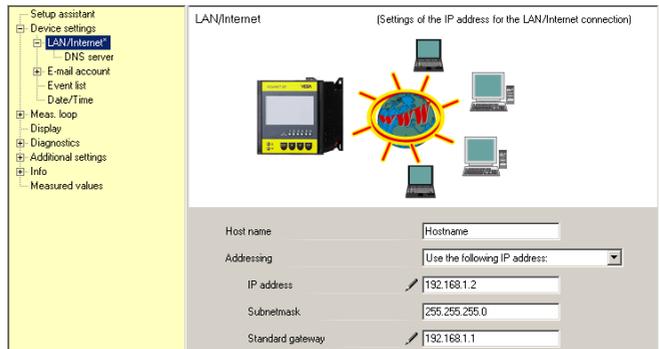
Fig. 21: Allocate IP address

2. Enter the IP address of your DNS server under "*Instrument settings - DNS Server*".
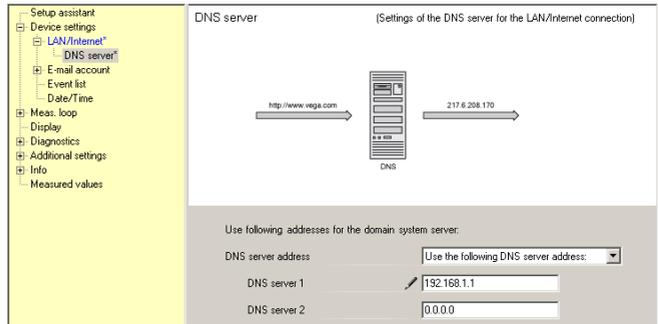
Fig. 22: Allocate DNS address

3. A proxy server is usually a computer connected between the sig-
    nal conditioning instrument and the Internet. With a proxy server it
    is possible to check and limit the access of the signal conditioning
    instrument to the Internet. Such access of the signal condition-
    ing instrument to the Internet is, for example, carried out when
    there is a WEB-VV data transmission. To ensure that these data
    are transmitted via the existing proxy server, the settings shown
    below must be made in the signal conditioning instrument.

    Your network administrator knows if the Internet access should be
    carried out via a proxy. He will also provide the necessary infor-
    mation such as IP address, port, user name and password.
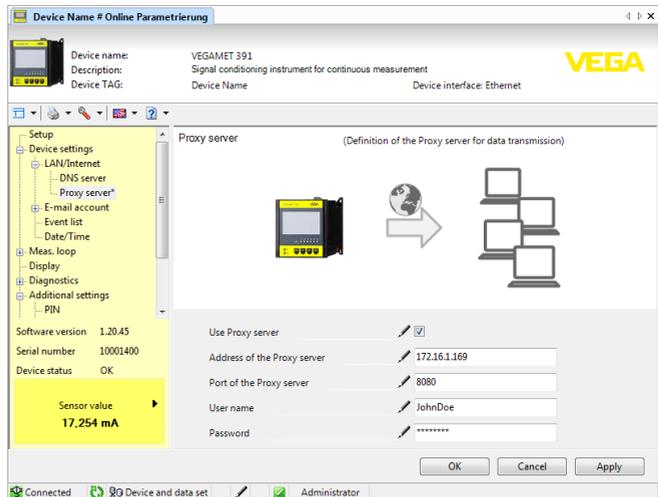
Fig. 23: Configuration Proxy server

4. In conclusion, define a WEB-VV event as described under chap-
    ter "*Set up measured value transmission*".

9.5 Setup MoRoS

Adjustment of the MoRoS is carried out with the help of any Web browser, e.g. the Internet Explorer. Connect your PC via Patchkabel with one of the four Ethernet ports on the front side of the MoRoS. In order to establish a connection, the PC must be able to obtain an IP address from the MoRoS automatically (DHCP). Alternatively, a fixed IP address can be used if it lies in the same address range of the MoRoS (192.168.1. xxx). You can get further information also from the operating instructions manual of the MoRoS.

MoRoS with PSTN/ISDN modem

Login

Start your Web browser and enter the IP address of the MoRoS (192.168.1.1) in the field marked "*Address*" or "*URL*". Authenticate yourself with the user name "*insys*" and the password "*moros*".
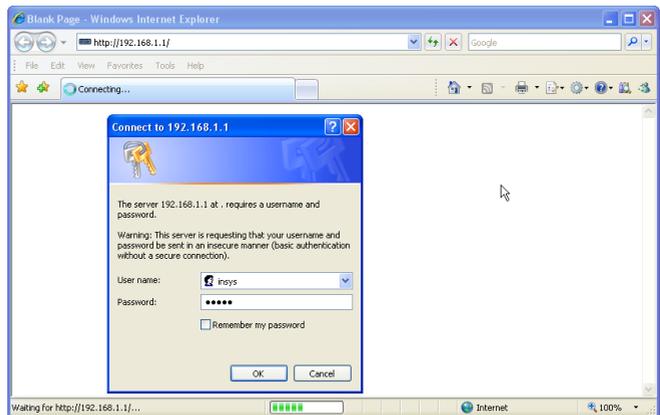
Fig. 24: MoRoS user authentication

Modem settings

Carry out the modem settings for remote parameterisation shown in the following illustrations. Select from the list box the country code of the country in which the modem will be used.
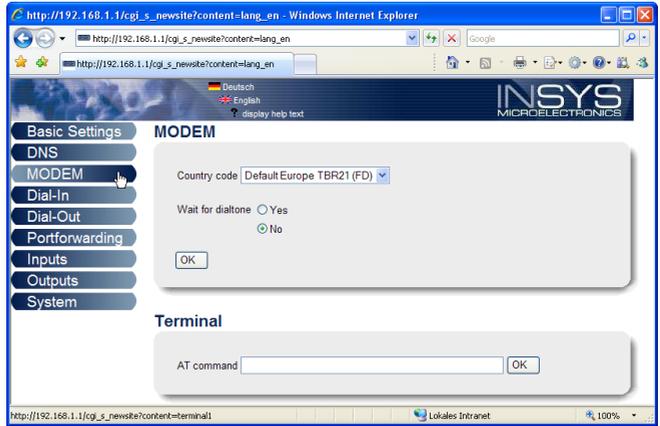
Fig. 25: Modem configuration

Dial-in settings

Make the dial-in settings for remote parameterisation shown in the following illustrations.
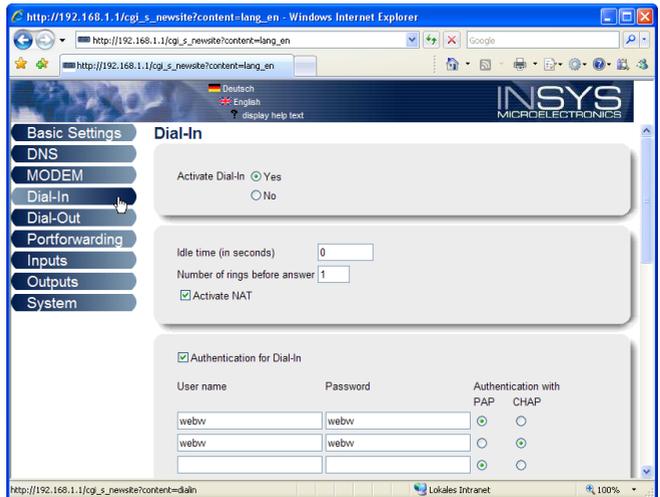
Fig. 26: Dial-in settings

Dial-out settings

Enter here the access data from your Internet provider.
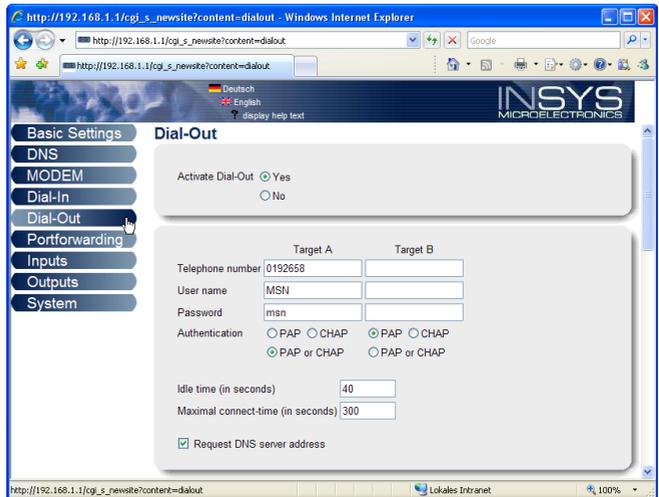
Fig. 27: Dial-out settings

Internal clock

The MoRoS contains an internal clock for controlling time-dependent events and dating system messages. Set the time, select the proper time zone and activate the time synchronization.
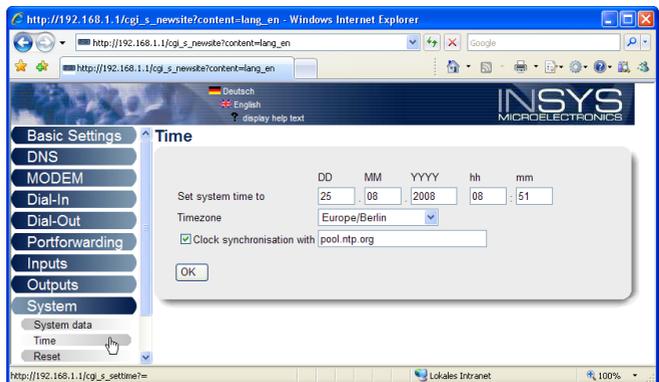
Fig. 28: Time synchronisation

MoRoS with GPRS modem

Login

Start your Web browser and enter the IP address of the MoRoS (192.168.1.1) in the field marked "*Address*" or "*URL*". Authenticate yourself with the user name "*insys*" and the password "*moros*".
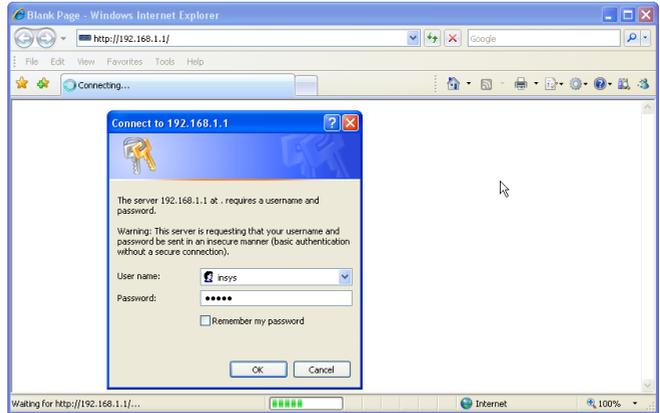
Fig. 29: MoRoS user authentication

GSM/GPRS settings

Carry out the GSM-GPRS settings shown in the following. Enter the ID of your mobile communications provider under "*Log in exclusively at this provider*". You get this by clicking on the option "*Read out provider list from modem*". You can get further information also from the operating instructions manual of the MoRoS.
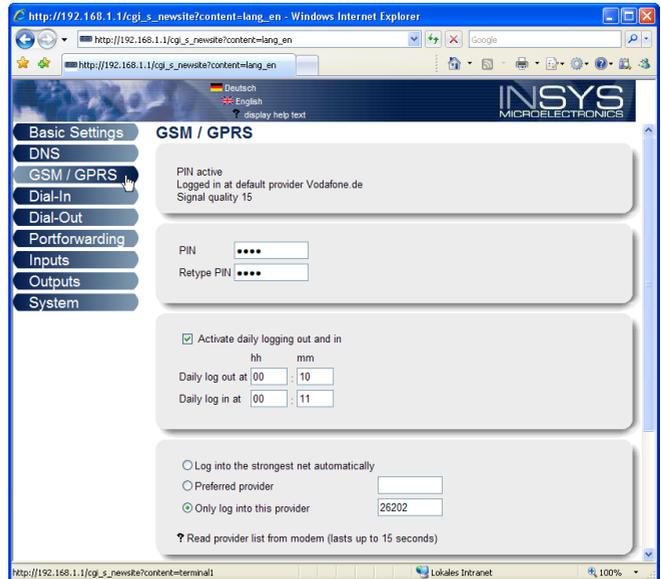
Fig. 30: GSM/GPRS settings

Dial-in settings

Make the dial-in settings for remote parameterisation shown in the following illustrations.
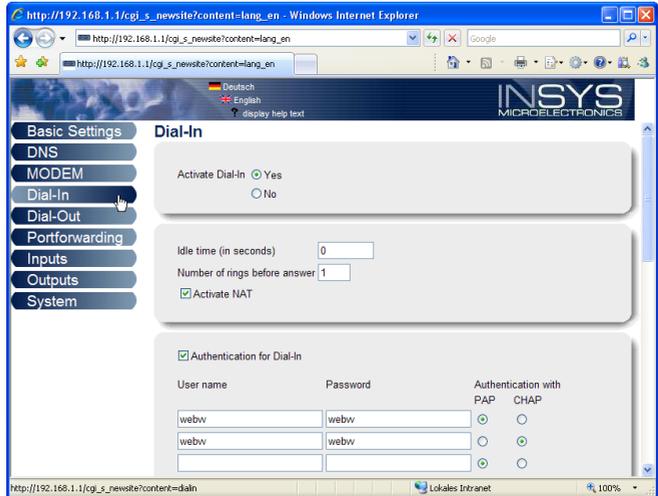
Fig. 31: Dial-in settings

Dial-out settings

Enter here the access data from your mobile communications provider.
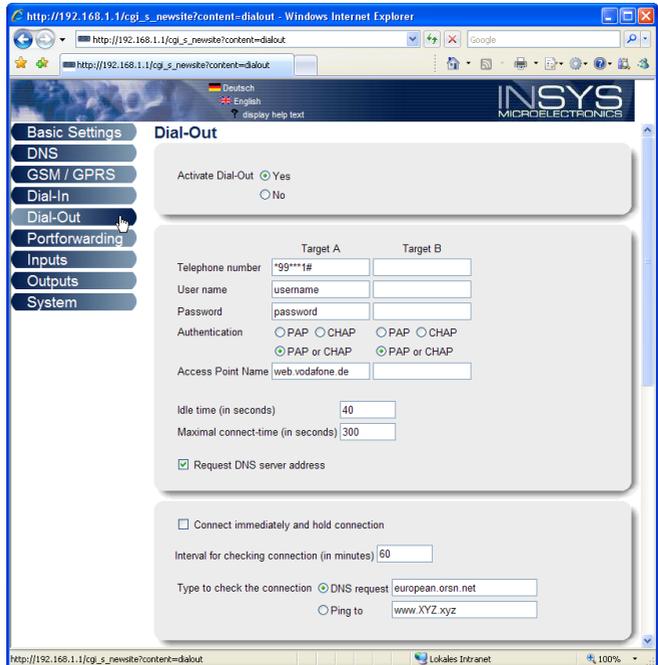
Fig. 32: Dial-out settings

Time

The MoRoS contains an internal clock for controlling time-dependent events and dating system messages. Set the time, select the proper time zone and activate the time synchronization.
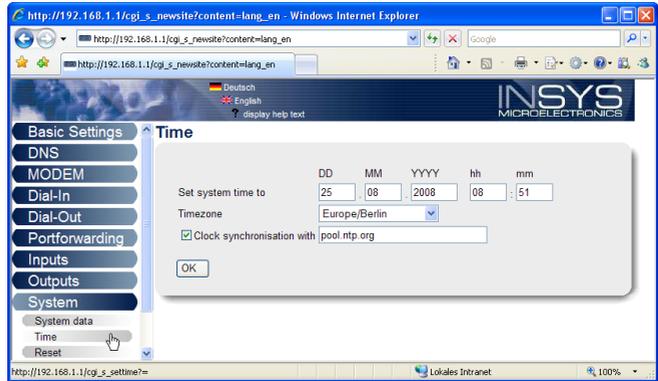
Fig. 33: Time synchronisation

9.6 Set up measured value transmission

Select the menu item "*Instrument settings - Event list*" and press the button "*New*". An assistant will now lead you through the configuration.

1. Select in the first window under "*Message type*" the list entry "*WEB-VV*" or "*WEB-VV (encoded)*".

2. In the second step enter the name or the IP address of the WEB-VV server. If you're using the VEGA servers (VEGA Hosting/WEB-VV VH), enter the URL "*web-vv.vega.com*" here. If you have a server of your own (Local Hosting/WEB-VV LH), you can get the server name or the IP address from your responsible network administrator.

3. In the last step, define when or how often the measured values are transmitted. Please remember that costs arise with every measured value transmission, depending on the type of connection.

4. Transfer your settings to the signal conditioning instrument.

After completing the configuration, you should start a test transmission to the WEB-VV server. Then contact the WEB-VV administrator. He will allocate the new instrument network accordingly and release the measured values for your inspection.
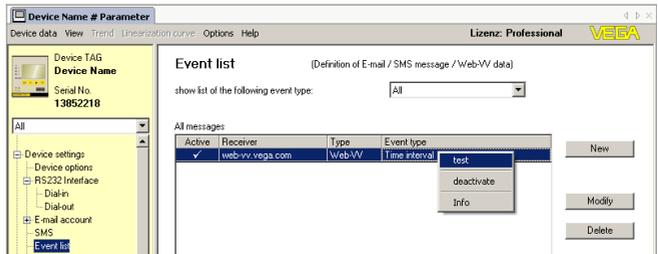
Fig. 34: Event list for setting up the measured value transmission.

10 Measured value/Status files

10.1 Description of the measurement data files

The PC/DCS values can be sent in four different file formats from the instrument via e-mail or retrieved via http. Enter the following line into your browser: *http://ip-address or Host name/file name*, e.g. *http://192.168.200.200/val.htm*.

The files have the following name:

- **val.txt** (text file)
- **val.csv** (CSV file)
- **val.htm** (HTML file)
- **val.xml** (XML file)

Configuration

The contents of the files consists of a header with the following information:

- **#System: VEGAMET 625** (instrument type)
- **#Version: 1.91** (Firmware version)
- **#TAG: Device Name** (device-TAG)
- **#SNR: 11162431** (instrument serial number)
- **#Date: 25.10.04** (transmission date)
- **#Time: 10:26:58** (transmission time)
- **#Ontime: 02:58:51** (switch on period)

The PC/DCS values are transmitted with the following information: **001,"TAG-No. 1",98.75,%**

- **001** (PC/DCS number)
- **TAG-No** (measurement loop TAG)
- **98.75** (measured value)
- **%** (unit)

An entry exists in the file for each PC/DCS output assigned in VEGAMET/VEGASCAN/PLICSRADIO. For the switching inputs of PLICSRADIO C62 (measurement loops 4 … 6) the values **0.00** (switch open) and **100.00** (switch closed) are transmitted as measured values, the unit is deleted.

TXT file

With a TXT file, information is transmitted as text.

Example of the content of a "*val.txt*" file of a VEGAMET 625.

File content	Description
#System: VEGAMET 625	Instrument type
#Version: 1.91	Firmware version
#TAG: Device Name	Device-TAG
#SNR: 11162431	Instrument serial number
#Date: 25.10.04	Transmission date
#Time: 10:26:58	Transmission time
#Ontime: 02:58:51	Switch on period
#PLS;TAG;VALUE;UNIT	Heading measured values

File content	Description
001,"TAG-No. 1",98,75,%	DCS value 1: no., measurement loop-TAG, value, unit
002,"TAG-No. 2"98,65,%	DCS value 2: no., measurement loop-TAG, value, unit
003,"TAG-No. 3",0.10,%	DCS value 3: no., measurement loop-TAG, value, unit

CSV file

In the **CSV**file (**C**haracter **S**eparated **V**alues) the values are separated by a certain character. Often a comma is used as separator. As separators, the signs "*Comma*" (default setting), "*Semicolon*" and "*Tabulator*" can be set. The individual data sets are separated by a line break character.

CSV files are particularly suitable for import into spread sheet programs, such as Microsoft Excel.

Example of the content of a "*val.csv*" file of a VEGAMET 625.

File content	Description
#System: VEGAMET 625	Instrument type
#Version: 1.91	Firmware version
#TAG: Device Name	Device-TAG
#SNR: 11162431	Instrument serial number
#Date: 27.10.04	Transmission date
#Time: 14:42:34	Transmission time
#Ontime: 02:58:51	Switch on period
#PLS;TAG;VALUE;UNIT	Heading measured values
001,"TAG-No. 1",98,73,%	DCS value 1: no., measurement loop-TAG, value, unit
002,"TAG-No. 2"98,65,%	DCS value 2: no., measurement loop-TAG, value, unit
003,"TAG-No. 3",0.10,%	DCS value 3: no., measurement loop-TAG, value, unit

HTML file

With an HTML file, the information is transmitted in HTML format. These files can be opened and displayed with a web browser (e.g. Microsoft Explorer).

Example of the presentation of a "*val.htm*" file of a VEGASCAN 693 with Microsoft Internet Explorer.

Fig. 35: Measured value file

XML file

With the XML file, information is transmitted in XML format. These files are particularly suitable for automated reading in of device data. The XML document is divided into different elements. These elements structure the XML document and start each with a so called "*Start Tag*" and finish with the "*End Tag*".

Example of the content of a "*val.xml*" file of a VEGAMET 624.

<?xml version="1.0" encoding="iso-8859-1"?	XML version
<data>	Start-TAG for data
<device>	Start-TAG device information
<system>VEGAMET624</system>	Instrument type
<version>1.91</version>	Firmware version
<devicetag>Device Name</devicetag>	Device-TAG
<snr>1230985</snr>	Instrument serial number
<date>13.09.2004</date>	Transmission date
<time>12:00:00</time>	Transmission time
<ontime>02:58:51</ontime>	Switch on period
</device>	End-TAG device information
<dataitem>	Start-TAG PC/DCS value
<plsnr>001</plsnr>	Number of the PC/DCS output
<tag>TAG-No. 1</tag>	Meas. loop TAG
<value>62,31</value>	Measured value
<unit>%</unit>	Unit of the measured value
</dataitem>	End-TAG PC/DCS value
</data>	End-TAG for data

<device>

Information within the "*<device>*"-TAG is information about the signal conditioning instrument. It is stated once at the beginning of the document.

<dataitem>

"*<dataitem>*"-TAG there is measured value information from a PC/DCS output. For each assigned PC/DCS output there exists such a TAG, i.e. up to six of these TAGs can exist with a VEGAMET/PLICS-RADIO, up to 30 with a VEGASCAN.

10.2 Description of the status files

In addition to the measured value file there is also a status file with status, relay and current output information. For retrieval via http, enter the following line into your browser: *http://ip-address or Host name/file name*, e.g. *http://192.168.200.200/state.htm*.

The files have the following name:

- **state.txt** (text file)
- **state.csv** (CSV file)
- **state.htm** (HTML file)
- **state.xml** (XML file)

Configuration

The contents of the files consists of a header with the following information:

- **#System: VEGAMET 625** (instrument type)
- **#Version: 1.91** (Firmware version)
- **#TAG: Device Name** (device-TAG)
- **#SNR: 11162431** (instrument serial number)
- **#Date: 25.10.04** (transmission date)
- **#Time: 10:26:58** (transmission time)
- **#Ontime: 02:58:51** (switch on period)
- **#Fault relay: 0** (status fail safe relay)

There is status information for each measurement loop. It includes data on the current device status, incl. the values or switching conditions of the current and relay outputs of VEGAMET/PLICSRADIO C62.

TXT file

With a TXT file, information is transmitted as text.

Example of the content of a "*state.txt*" file of a VEGAMET 625.

File content	Description
#System: VEGAMET 625	Instrument type
#Version: 1.91	Software version
#TAG: Device Name	Device-TAG
#SNR: 11162431	Instrument serial number
#Date: 25.10.04	Transmission date
#Time: 10:26:58	Transmission time
#Ontime: 02:58:51	Switch on period

File content	Description
#Fault relay: 0	Status fail safe relay
#Loop,Tag,State,Description	Header measurement loop status information
1,TAG-No. 1,OK,-	Measurement loop no., measurement loop TAG, status, description
#Input,State,Description	Heading input status information
1,OK,-	Input no., status, description
#Current,Value,Unit,State,Description	Heading current output status information
1,19.798,mA,OK,-	Current output no., current value, unit, status, description
#Relay,State,Unit,Description	Heading relay status information
1,1,-,OK,-	Relay no., status: 1=On 0=Off, status, description
#PC-PLS,Value,Unit,State,Description	Heading PC/DCS output status information
1,98.73,%,OK,-	PC/DCS no., value, unit, status, description
2,TAG-No. 2,OK,-	Measurement loop no., measurement loop TAG, status, description
#Input,State,Description	Heading input status information
2,OK,-	Input no., status, description
#Current,Value,Unit,State,Description	Heading current output status information
2,19.784 mA,OK,-	Current output no., current value, unit, status, description
#Relay,State,Unit,Description	Heading relay status information
2,1,-,OK,-	Relay no., status: 1=On 0=Off, status, description
#PC-PLS,Value,Unit,State,Description	Heading PC/DCS output status information
2,98.65,%,OK,-	PC/DCS no., value, unit, status, description
3,TAG-No. 1,OK,-	Measurement loop no., measurement loop TAG, status, description
#Input,State,Description	Heading input status information
3,OK,-	Input no., status, description
#Current,Value,Unit,State,Description	Heading current output status information
3,19.987,mA,OK,-	Current output no., current value, unit, status, description
#Relay,Value,Unit,State,Description	Heading relay status information
3,1,OK,-	Relay no., status: 1=On 0=Off, status, description

File content	Description
#PC-PLS,Value,Unit,State,De scription	Heading PC/DCS output status information
3,0.08,%,OK,-	PC/DCS no., value, unit, status, description

CSV file

In the **CSV**file (**C**haracter **S**eparated **V**alues) the values are separated by a certain character. Often a comma is used as separator. As separators, the signs "*Comma*" (default setting), "*Semicolon*" and "*Tabulator*" can be set. The individual data sets are separated by a line break character.

CSV files are particularly suitable for import into spread sheet programs, such as Microsoft Excel.

Example of the content of a "*state.csv*" file of a VEGAMET 625.

File content	Description
#System: VEGAMET 625	Instrument type
#Version: 1.91	Firmware version
#TAG: Device Name	Device-TAG
#SNR: 11162431	Instrument serial number
#Date: 10.10.04	Transmission date
#Time: 10:26:58	Transmission time
#Ontime: 02:58:51	Switch on period
#Fault relay: 0	Status fail safe relay
#Loop,Tag,State,Description	Header measurement loop status information
1,TAG-No. 1,OK,-	Measurement loop no., measurement loop TAG, status, description
#Input,State,Description	Heading input status information
1,OK,-	Input no., status, description
#Current,Value,Unit,State,De scription	Heading current output status information
1,19.798,mA,OK,-	Current output no., current value, unit, status, description
#Relay,Value,Unit,State,Des cription	Heading relay status information
1,1,-,OK,-	Relay no., status: 1=On 0=Off, status, description
#PC-PLS,Value,Unit,State,De scription	Heading PC/DCS output status information
1,98.73,%,OK,-	PC/DCS no., value, unit, status, description
2,TAG-No. 2,OK,-	Measurement loop no., measurement loop TAG, status, description
#Input,State,Description	Heading input status information
2,OK,-	Input no., status, description

File content	Description
#Current,Value,Unit,State,Description	Heading current output status information
2,19.784,mA,OK,-	Current output no., current value, unit, status, description
#Relay,Value,Unit,State,Description	Heading relay status information
2,1,-,OK,-	Relay no., status: 1=On 0=Off, status, description
#PC-PLS,Value,Unit,State,Description	Heading PC/DCS output status information
2,98.65,%,OK,-	PC/DCS no., value, unit, status, description
3,TAG-No. 1,OK,-	Measurement loop no., measurement loop TAG, status, description
#Input,State,Description	Heading input status information
3,OK,-	Input no., status, description
#Current,Value,Unit,State,Description	Heading current output status information
3,19.987,mA,OK,-	Current output no., current value, unit, status, description
#Relay,Value,Unit,State,Description	Heading relay status information
3,1,-,OK,-	Relay no., status: 1=On 0=Off, status, description
#PC-PLS,Value,Unit,State,Description	Heading PC/DCS output status information
3,0.08,%,OK,-	PC/DCS no., value, unit, status, description

HTML file

With an HTML file, the information is transmitted in HTML format. These files can be opened and displayed with a web browser (e.g. Microsoft Explorer).

Example of a presentation of a "*state.htm*" file of a VEGASCAN 693 with Microsoft Internet Explorer.
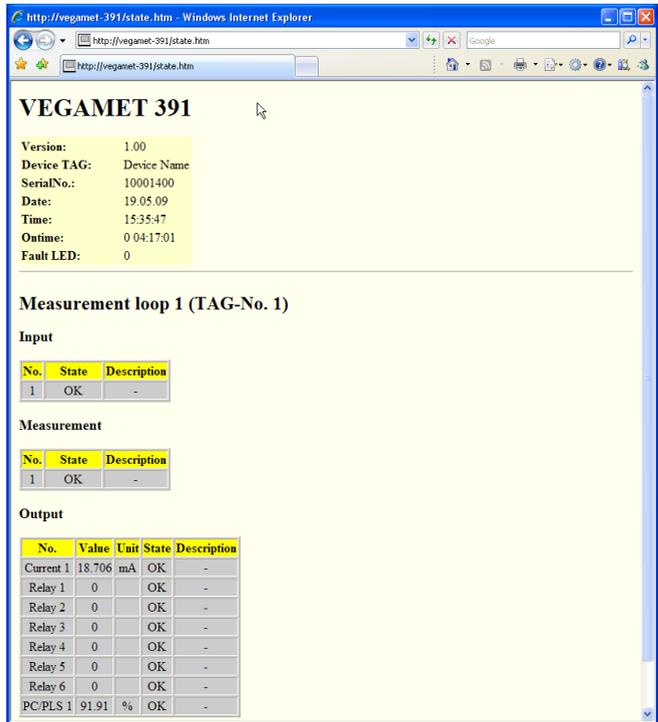
Fig. 36: Status file

XML file

With the XML file, information is transmitted in XML format. These files are particularly suitable for automated reading in of device data. The XML document is divided into different elements. These elements structure the XML document and start each with a so called "*Start Tag*" and finish with the "*End Tag*".

The XML-file provided by VEGAMET/VEGASCAN has the following configuration:

Example of the content of a "*state.xml*" file of a VEGAMET 624.

File content	Description
<?xml version="1.0" encoding="iso-8859-1"?	XML version
<data>	Start-TAG for data
<device>…</device>	TAGs device information
<loopitem>…Start-TAG measurement loop status information	
<input>…</input>	TAGs input status information
<measurement>…</measurement>	TAGs measurement loop status information

File content	Description
<output>	Start-TAG for output status information
<current>…</current>	TAGs current output status information
<relay>…</relay>	TAGs relay status information
<pcpls>…</pcpls>	TAGs PC/DCS output status information
</output>End-TAG measurement loop status information	End-TAG for output status information
</loopitem>	
</data>	End-TAG for data

<device>
The information within the "*<device>*"-TAG is information on VEGAMET/VEGASCAN/PLICSRADIO. It is stated once at the beginning of the document.

<loopitem>
Within the "*<loopitem>*"-TAG there is status information about a measurement loop. Such a TAG exists for each measurement loop, e.g. up to 3 such TAGs can be available with a VEGAMET, 15 with a VEGASCAN 15 and six with a PLICSRADIO C62.

<input>
In the " *<input>* "-TAG you find the status information on the input of a measurement loop.

<measurement>
In the " *<measurement>* "-TAG you find the status information on the measurement loop processing of a measurement loop.

<output>
In the " *<output>* "-TAG you find the status information on the outputs of the measurement loop.

<current>
In the " *<current>* "-TAG you find the status information of the current output of the measurement loop.

<relay>
In the "*<relay>* "-TAG you find the status information of the relay output of the measurement loop.

<pcpls>
In the "*<pcpls>* "-TAG you find the status information of the PC/DCS output of the measurement loop.

In these TAGs there are additional TAGs which are explained in the following example.

File content	Description
<?xml version="1.0" encoding="iso-8859-1"?	XML version
<data>	Start-TAG for data

File content	Description
<device>	Start-TAG device information
<system>VEGAMET624</system>	Instrument type
<version>1.91</version>	Software version
<devicetag>Device Name</devicetag>	Device-TAG
<snr>1230985</snr>	Instrument serial number
<date>10.09.2004</date>	Transmission date
<time>12:00:00</time>	Transmission time
<ontime>02:58:51</ontime>	Switch on period
<faultrelay>0</faultrelay>	Status fail safe relay
</device>	End-TAG device information
<loopitem>	Start-TAG measurement loop status information
<nr>001</nr>	Measurement loop no.
<tag>TAG No. 1</tag>	Meas. loop TAG
<input>	Start-TAG input status information
<nr>001</nr>	Input no.
<state>OK</state>	Input status
<desc>-</desc>	Description status
</input>	End-TAG input status information
<measurement>	Start-TAG measurement loop status information
<nr>001</nr>	Measurement loop no.
<state>OK</state>	Measurement loop processing status
<desc>-</desc>	Description status
</measurement>	End-TAG measurement loop status information
<output>	Start-TAG for output status information
<current>	Start-TAG current output status
<nr>001</nr>	Current output no.
<value>12.00</value>	Value of the current output
<unit>mA</unit>	Unit
<state>OK</state>	Current output status
<desc>-</desc>	Description status
</current>	End-TAG current output status
<current>	Start-TAG current output status
<nr>002</nr>	Current output no.
<value>12.00</value>	Value of the current output

File content	Description
<unit>mA</unit>	Unit
<state>OK</state>	Current output status
<desc>-</desc>	Description status
</current>	End-TAG current output status
<current>	Start-TAG current output status
<nr>003</nr>	Current output no.
<value>12.00</value>	Value of the current output
<unit>mA</unit>	Unit
<state>OK</state>	Current output status
<desc>-</desc>	Description status
</current>	End-TAG current output status
<relay>	Start-TAG relay output status
<nr>001</nr>	Relay output no.
<value>1</value>	Switching status 0=Off, 1=On
<unit>-</unit>	Unit
<state>OK</state>	Relay output status
<desc>-</desc>	Description status
</relay>	End-TAG relay output status
<relay>	Start-TAG relay output status
<nr>002</nr>	Relay output no.
<value>1</value>	Switching status 0=Off, 1=On
<unit>-</unit>	Unit
<state>OK</state>	Relay output status
<desc>-</desc>	Description status
</relay>	End-TAG relay output status
<relay>	Start-TAG relay output status
<nr>003</nr>	Relay output no.
<value>0</value>	Switching status 0=Off, 1=On
<unit>-</unit>	Unit
<state>OK</state>	Relay output status
<desc>-</desc>	Description status
</relay>	End-TAG relay output status
<pcpls>	Start-TAG PC/DCS output status
<nr>001</nr>	PC/DCS output no.
<value>50,00</value>	Value
<unit>%</unit>	Unit
<state>OK</state>	PC/DCS output status

File content	Description
<desc>-</desc>	Description status
<pcpls>	End-TAG PC/DCS output status
</output>	End-TAG for output status information
</loopitem>	End-TAG measurement loop status information
</data>	End-TAG for data

11 Measured value transmission via SMS

11.1 General information

Sending an SMS is only possible with signal conditioning instruments with serial interface in conjunction with modems supported by VEGA. A GSM modem and a conventional telephone network modem are available for the analogue telephone connection. To send an SMS, the signal conditioning instrument dials into an SMS Service Center (SMSC): Via this SMS Service Center the SMS is the transferred to the subscriber (e.g. mobile phone).

i **Note:**
To set up the SMS function, PACTware with the corresponding DTMs is required.

11.2 Settings for SMS transmission

Open the suitable DTM in PACTware and select the menu item "*Device settings - SMS*" for configuration of the SMS function. As basic setting, the connected modem and the requested SMS provider (SMSC) are selected.

Modem

If the SMS should be transmitted via the conventional telecommuni-cation network, you will need an analogue telephone connection with direct outward dialing and the Phoenix Contact PSI data/fax modem (order no.: MODEM.JX)

If transmission is made via GSM, the Siemens TC35i GSM cellular phone modem must be used (order no.: MODEM.FX). For this you will need a GSM contract. Make sure that there is sufficient network coverage by the provider. Furthermore the PIN of the used SIM card must be deactivated.

Provider

From the provided list you can select the suitable provider (SMSC). If the requested provider is not listed, you can select "*User-defined*" and enter the respective phone number (only Siemens TC35i) in the field "*SMSC phone number*". With Poenix Contact PSI Data/Fax Modem you can only use the providers available in the list.

SMSC phone number

In this field, the phone number of the provider selected previously from the list appears. After having selected "*User-defined*" you can enter the phone number of the requested provider.

SMS configuration as-sistent

Further SMS settings are carried out under the menu item "*Event list*". These are:

- "*Phone number:*" Phone number of the SMS addressee
- "*Event type:*" Time, measured value or status-controlled
- "*Contents of messages:*" Measured value or status
- "*Actuator for transmission:*" Time, interval, exceeding/underrun-ning the measured value

For e-mail transmission there is an assistant available for simple configuration. To start the assistant, select the button "*New*". For further information see the online help.

12 Device trend/Data logger (only VEGAMET/ VEGASCAN)

12.1 General information

With the device recording the measured values of a VEGA instrument can be monitored. There are two options for trend recording:

Device trend

The data are saved over a certain period in the VEGA instrument and can be read out again later on. Via PACTware and DTM different recording conditions can be set and the process can be started or stopped. The max. recording period is limited by the memory of the signal conditioning instrument. The max. recording period differs depending on the recording type (interval or measured value difference).

When recording with interval, a maximum of 200 000 measured values can be recorded, when recording with measured value difference, the maximum is reduced to 140 000. If a measured value is saved every minute, a period of e.g. 138 days results (with measured value difference). If more than one curve is recorded, this period is reduced accordingly.

> **Note:**
> The recorded data are written in a period of two to five minutes from the internal RAM to a flash disk. In case of voltage failure, recordings of the last minutes can get lost.

DTM trend

The data are only saved on the PC during an online connection with PACTware and DTM. The max. recording period is limited only by the storage space on the hard disc.

12.2 Setting of the device trend

The settings are carried out in the DTM under the menu item "*Diagnostics - Device trend - Settings*". Depending on the device, up to 15 curves are available (3x with VEGAMET or 15x with VEGASCAN). If required, these curves are activated or deactivated/deleted on this side. By pushing the button "*Add*", an installation assistant for creating the selected curve is started. The following settings are carried out step-by-step:

Measurement loop/Measured value

In the first step you have to select the requested measurement loop and the measured value.

Recording mode

Here you set the requested recording interval. The following options are possible:

- "*In time interval*": Recording is carried out in certain adjustable time intervals
- "*With measured value difference*": Recording is carried out measured value dependent with adjustable measured value difference

A combination of the two recording modes is also possible.

Start/Stop conditions

To enable a specific monitoring, the start and stop conditions can be set for the recording in dependence on the current measured value. If a start condition is met, the recording starts in the VEGA instrument. The current recording stops as soon as the stop condition is reached. If the start condition is fulfilled again, the recording does not switch on again.

The recording can be stopped automatically if the memory in the VEGA instrument is full. Select the option "*Stop recording when memory is full*". If this option is selected, the older measured values will be overwritten automatically (ring buffer).

12.3 Start of the recording

After having adjusted the recording mode and the start/stop conditions, these settings have to be transferred to the VEGA instrument ("*Device data - Save in device*"). Activate the trend recording by pushing the button "*Start recording*". The current utilisation of the memory and the number of recorded measured values is now displayed under "*Status*". Modification of the recording conditions is not possible during a recording.

12.4 Load recording from device

Retrieval of the recorded measured values can be carried out via PACTware/DTM, http or e-mail. The Ethernet as well as the RS232 interface can be used.

Retrieval via DTM

To load a saved curve from the device, select the page "*Diagnosise - Device trend*" and click with the right mouse key to the diagram. Select in the opening popup menu the entry "*Load recording from device*". A dialogue window opens in which the curve and the range can be selected. In the list box for selecting the curve, all curves are shown which are currently activated in the signal conditioning instrument. Under "*Range*" you see the available range on the right which can be limited by the fields "*Begin*" and "*End*". Through this, the time required for reading out the curve can be considerably reduced.

Further information on trend recording is available in the online help of the corresponding DTM.

Retrieval via http

When recording is activated, two files with different formats are created for each curve. For curve 1 these are "*crv01.gnd*" and "*crv01.csv*". Additional curves correspondingly get the consecutive number, e.g. "*crv02.gnd*" for curve 2. Files with the ending "*.gnd*" are used for graphic presentation of the measured value curves. If the values should be displayed as a spreadsheet or further processed (e.g. with Excel), the files with the ending "*.csv*" are used.

To read out the recording, enter the following command in the address field of your browser: "*http://IP address of the signal conditioning instrument or the Host name/File name of the requested curve*". For graphical presentation of curve 1 with the default IP address this would be: "*http://192.168.200.200/crv01.gnd*"

Information:

The presentation of large recordings can take a long time depending on the number of curves, the interface and the retrieval method. Reading out via Ethernet is much quicker than via RS232. Display via http is also much quicker than via the DTM.

Transmission via e-mail

When transmitting device trends via e-mail, the same files as for http data retrieval are used. In the e-mail configuration assistant you can select and configure the respective curves and formats.

You can find further information in chapter "*Measured value transmission via e-mail*" and in the online help of the respective DTM.

INDEX

X
XML file 47, 52

Printing date:

VEGA

CE

30325-EN-130701