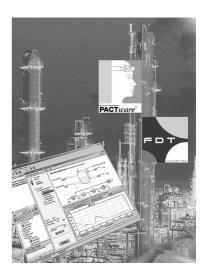
Operating Instructions

Software for adjustment of communication-capable sensors and controllers

PACTware/DTM Collection 09/2022

Installation, first steps





Document ID: 28243







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1 About this document

1.1 Function

This operating instructions manual provides all the information you need for installation and commissioning. Please read this information before setting up the instrument and keep this manual accessible in the immediate vicinity of the device.

1.2 Target group

This operating instructions manual is directed to trained personnel. The contents of this manual must be made available to the qualified personnel and implemented.

1.3 Symbols used



Document ID

This symbol on the front page of this instruction refers to the Document ID. By entering the Document ID on www.vega.com you will reach the document download.



Information, tip, note

This symbol indicates helpful additional information.



Caution: If this warning is ignored, faults or malfunctions can result.

Warning: If this warning is ignored, injury to persons and/or serious damage to the instrument can result.



Danger: If this warning is ignored, serious injury to persons and/or destruction of the instrument can result.



Ex applications

This symbol indicates special instructions for Ex applications.



SIL applications

This symbol indicates instructions for functional safety which must be taken into account particularly for safety-relevant applications.

List

The dot set in front indicates a list with no implied sequence.

→ Action

This arrow indicates a single action.

1 Sequence of actions

Numbers set in front indicate successive steps in a procedure.



2 For your safety

2.1 Authorised personnel

All operations described in this documentation must be carried out only by trained, qualified personnel authorised by the plant operator.

2.2 Appropriate use

PACTware (Process Automation Configuration Tool) is a manufacturer and fieldbus-independent software for adjustment of all types of field instruments. The corresponding VEGA instruments can be adjusted with the DTMs (Device Type Manager) supplied by VEGA.

2.3 Warning about incorrect use

Inappropriate or incorrect use of an instrument adjusted with PACT-ware can give rise to application-specific hazards, e.g. vessel overfill or damage to system components through incorrect mounting or adjustment. Thus damage to property, to persons or environmental contamination can be caused

2.4 General safety instructions

Installation and use of the software are carried out at your own risk. We do not accept liability for consequential damage.

2.5 Environmental instructions

Protection of the environment is one of our most important duties. That is why we have introduced an environment management system with the goal of continuously improving company environmental protection. The environment management system is certified according to DIN EN ISO 14001.

Help us to meet with these requirements.



3 Product description

3.1 Configuration

Scope of delivery

The scope of delivery encompasses:

- Data medium DTM Collection:
 - Microsoft .NET Framework 3.5 and 4.6.1
 - The current PACTware version.
 - all currently available VEGA DTMs in free-of-charge standard version
 - HART protocol driver from Codewrights GmbH
 - Generic HART-DTM from ICS GmbH
 - Softing Profibus DTM
- Operating Instructions Installation, first steps

3.2 What is PACTware/FDT/DTM?

PACTware

PACTware (Process Automation Configuration Tool) is manufacturer and fieldbus-independent software for adjustment of all types of field instruments. The DTMs (Device Type Manager) of the respective field device manufacturers are integrated into this open, freely available supporting program via the interface specification FDT 1.21/2.0. To adjust a field device, a DTM corresponding to the instrument type is always required (this DTM is developed and sold by the respective field device manufacturer).

FDT

FDT (Field Device Tool) is a standardised interface description that describes the interaction between DTM and frame application, e.g. PACTware. FDT controls the data exchange between the different DTMs and the supporting program.

DTM

The DTM (Device Type Manager) is the actual adjustment module for sensors and field components. It contains all instrument-specific data and functions of a sensor type and delivers all graphic elements and dialogues for adjustment. A DTM is not a stand-alone, executable software but requires a supporting program, like PACTware, from which it can run.

DTM Collection

The VEGA DTM Collection, a software package comprising PACT-ware with VEGA-DTM as well as various standard communication DTMs, is the operating software for all currently available, communicable VEGA sensors. In addition, all communicable control devices of the VEGAMET series as well as all mobile radio units of the PLICSMOBILE series can be operated fully with the appropriate DTM.

A Bluetooth driver enables the wireless communication with Bluetooth-capable VEGA instruments such as the display and adjustment module PLICSCOM. For PCs without an integrated Bluetooth module, a VEGA Bluetooth USB adapter is available.

There is also complete support for parameter adjustment of VEGA sensors with Modbus extensions via a USB connection. For param-



eter adjustment via Modbus there is also a Modbus-CommDTM included in the package.

3.3 VEGA-DTM

All device DTMs 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.

The full version additionally contains an extended printing function for complete device documentation as well as a tank calculation program. In addition, the " DataViewer" software is available in the full version. This serves for convenient display and analysis of all information saved by the service recording.

Measured values, echo curves and event memory are recorded and saved as well as settings backed up by the service recording that is also available in the standard version.

The standard version is available as a free-of-charge download from our homepage. The full version is available 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 may be copied a number of times and can be installed on several computers, however may not be used by more than one user at a time.

VEGA offers individual DTMs for more than 200 instrument types, all of them are installed via a common setup program.

3.4 Storage and transport

Packaging

The packaging of the DVD consists of easily separable monomaterials. These materials are environment friendly and recyclable. Dispose of the packaging material via specialised recycling companies.



4 Software installation

General information

4.1 System requirements

CPU 1 GHz or higher, 1 GB RAM, 1 GB free memory, Windows 7/8/10 (32/64 Bit), Internet Explorer 6.0 or higher, Microsoft .NET Framework 2.0/3.5 and 4.6.1, graphic resolution 1024 x 768 or higher, Microsoft compatible mouse. RS232/USB/Ethernet interface.

The size of the working memory depends on the operating system and the processor as well as the installed application software and corresponds to an average value. At least 2 GB RAM should be available with 64 Bit systems.

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Note:

To install the software you will need administrator rights. After the installation, a Windows restart is necessary to actually complete the installation. For that reason, the subsequent Windows login must be carried out with the same user name the installation was performed under. For installation under Windows 10, .NET 3.5 must be activated.

4.2 Installation of PACTware and DTM

- 1. Before installation, all running programs should be exited.
- When you download the DTM Collection, you receive a selfextracting archive as an executable Exe-file. Double clicking this file starts unpacking and the subsequent installation process.

Alternatively, insert the DVD. The installation program will the start automatically. If the DVD does not start automatically, the installation can be started by a double click on the file " *autorun.exe*".

In the opening installation assistant you now select the requested language. This selection can be modified after installation.

In the next window, you select " Standard" or " User-defined". With the standard installation, only the components required for VEGA instruments are installed. If " User-defined" is selected, the available DTM packages can be selected individually in the following window.

Start the actual installation process via the button "Installation".



Note:

For the installation of PACTware, Microsoft .NET Frameworks 2.0/3.5 and 4.6.1 is a prerequisite. The installation assistant checks automatically if .NET, PACTware and the VEGA plics DTMs are already installed. If that is the case, this will be marked in the respective window and the programs will not be installed again.





Fig. 1: Installation assistant

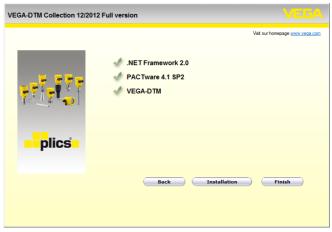


Fig. 2: Installation assistant (exemplary)



5 Adjustment

5.1 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".

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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.

5.2 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 wizard is opened from the PACTware menu bar under "Project - VEGA Project Wizard". The "VEGA Project Wizard" opens and you only have to select the desired interface for automatic creation of the project. If only one device is found at the selected interface, the DTM parameters window is opened automatically and the device data are loaded. If several devices are found, a window appears in which all devices are listed. After selecting the desired device, the DTM parameters window is opened automatically and the device data are 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".



Fig. 3: 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 ".

5.3 Project examples

Project creation for a VEGA sensor

Connection of sensor via VEGACONNECT

The following example shows a typical project containing a sensor connected e.g. to a PLC. We recommend using the " VEGA project assistant" as this considerably facilitates project creation and helps avoid errors. All necessary components are found automatically and integrated in 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:

Select in the device catalogue first of all the " VEGACONNECT
4" DTM from the category " Driver" and transfer it, for example by
double clicking, to the project window.



- Select the requested sensor DTM from the category " Device" and transfer it to the project window. You are asked for " HART" or " I2C" depending on the connection. If VEGACONNECT is connected directly to the sensor, select type " I2C". When connecting via the 4 ... 20 mA cable, type " HART" must be selected.
- Now open the DTM by double clicking on the sensor in the project window and carry out the desired settings, see chapter " Parameter adjustment".

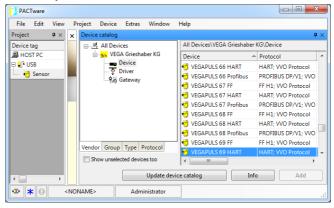


Fig. 4: Project with VEGAPULS

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:

- 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.
- Select the VEGAMET 391 DTM from the category " Gateways" and transfer it into the project window.
- Select the requested sensor DTM from the category " Device" and transfer it to the project window.
- Now open the DTM by double clicking on the sensor in the project window and carry out the desired settings, see chapter " Parameter adjustment".



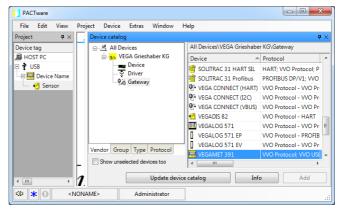


Fig. 5: Project with VEGAPULS

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:

- 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.
- Select the VEGAMET 624 DTM from the category " Gateways" and transfer it to the project window.
- 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.
- Now open the VEGAMET DTM and sensor DTM by double clicking and carry out the desired settings, see chapter " Parameter adjustment".



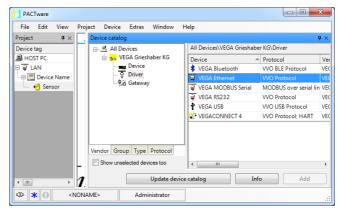


Fig. 6: Project VEGAMET with VEGAPULS

Project generation, sensor via Bluetooth communication

Sensor via PLICSCOM/ Bluetooth

The following example shows a typical project of a sensor connected through the display and adjustment module PLICSCOM via Bluetooth.

For communication with the display and adjustment module a Bluetooth module (Bluetooth LE) integrated in the PC can be used. A Bluetooth USB-adapter is also available as an alternative.

We recommend, using the "VEGA project assistant", this facilitates the project generation considerably and mistakes can be avoided. All involved components will be found automatically and integrated in 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:

- In the device catalogue, first select the "VEGA Bluetooth" DTM from the category "Driver" and transfer it, e.g. by double clicking, to the project window.
- Select the PLICSCOM DTM from the category " Gateways" and transfer it to the project window.
- Select the requested sensor DTM from the category "Device" and transfer it to the project window.
- 4. Now open the sensor DTM by double clicking and carry out the desired settings, see chapter " Parameter adjustment".



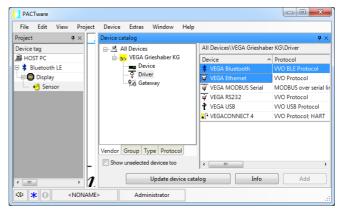


Fig. 7: Project, sensor via Bluetooth

5.4 Parameter adjustment (synchronized operation)

With the parameter adjustment in synchronized operation, the DTM tries to keep the instance data, this means the data stored in the DTM are always consistent to the device data. To achieve this, always the complete data set of the device is read out during connection and copied to the instance data of the DTM. This mode corresponds to the standard behaviour of the VEGA DTMs.

After the project is created, the parameter adjustment of the instrument can be started. This is done via double click to the requested DTM in the project window or via the right mouse key by selecting " Parameter".

In the following procedure, a difference is made between offline and online mode.

Offline mode

In offline mode, the project can be prepared, created and stored without connected instruments. Later on, in online mode these data can be transmitted to the instruments ready for operation.



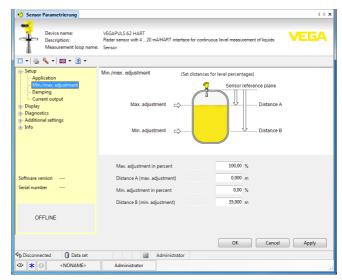


Fig. 8: DTM view VEGAPULS 62 offline operation (synchronized)

Online mode

In online mode, the instruments on which the parameter adjustment is to be carried out must be connected and ready for operation. By selecting the appropriate DTM with the right mouse key and the command "Connect", the online mode is set up for operation. After double clicking to the DTM, connection is initiated which simultaneously checks the communication, the sensor type and additional parameters. If necessary, all parameters of the instrument will be transferred automatically. Via the PACTware menu item "Read data from device", all parameters of the instruments can be loaded anytime. All modifications which are carried out will be stored automatically in the instruments after pushing the OK or Accept button.



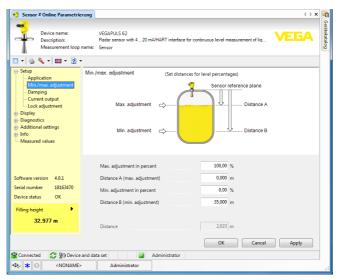


Fig. 9: DTM view VEGAPULS 62 online operation (synchronized)

By selecting the respective DTM with the right mouse key and the command " Separate connection", the DTM can be switched again to offline operation.

Information:

Detailed explanations on parameter adjustment and project creation are available in the online help of PACTware and the DTMs. Also consult the operating instructions manual of the corresponding instrument for setup and correct parameter adjustment.

5.5 Parameter adjustment (non-synchronized operation)

With the parameter adjustment in non-synchronized mode, the instance data, this means the data stored in the DTM, and the device data are kept separately. An automatic adjustment is not carried out. For this reason, the contents of the DTM window in offline mode can be different to that in online mode. Furthermore only data of the parameter page are loaded during connection which is actually opened in the DTM.

This mode is a version which is particularly designed for slow bus systems (e.g. Wireless HART). For activation of this mode, you have to use the VEGA DTM Configurator, file card " *Synchronization*".



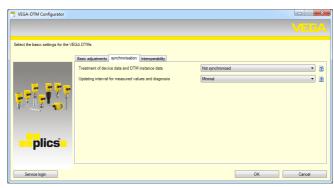


Fig. 10: DTM Configurator: Configuration of the data synchronization

This can be found in the Windows program group *VEGA – VEGA-DTM Tools*. Here, you can also set the updating interval for online values (diagnosis and measured values). Settings in the file card " *Synchronization*" influence all VEGA DTMs for operation of plics®plus sensors. Please close PACTware before you change settings. When the DTMs work in non-synchronized mode, then a respective information appears in the tool bar.

After the project is created, the parameter adjustment of the instrument can be started. This is done via double click to the requested DTM in the project window or via the right mouse key by selecting "Parameter". In the following process, a difference is made between offline and online mode.

Offline mode (represents the instance data)

In offline mode, the project can be prepared, created and stored without connected instruments. Later on, these DTM instance data can be transferred to the ready devices by means of the PACTware menu " Write into device". However, in advance, connection must be provided by selecting the respective DTM with the right mouse key and the command " Connect".



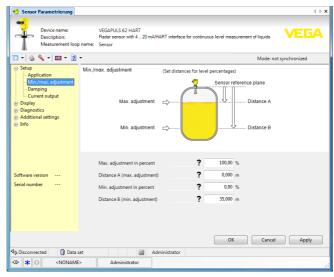


Fig. 11: DTM view VEGAPULS 62 offline operation (not synchronized)

Online mode (represents the device data)

In online mode, the instruments on which the parameter adjustment is to be carried out must be connected and ready for operation. By selecting the appropriate DTM with the right mouse key and the command "Connect", the online mode is set up for operation. After double clicking to the DTM, connection is initiated which simultaneously checks the communication, the sensor type and additional parameters. Furthermore the parameters of the opened DTM parameter page are transmitted from the device. Only when moving to another parameter page, the data of the selected parameter page are loaded. Via the PACTware menu item "Read data from device", all parameters of the instruments can be loaded anytime. All modifications which are carried out will be stored automatically in the instruments after pushing the OK or Accept button. The DTM instance data will not be changed.



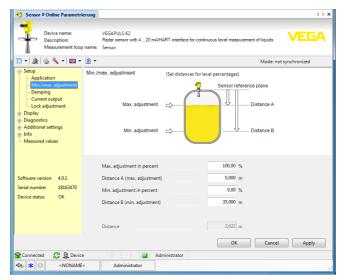


Fig. 12: DTM view VEGAPULS 62 online operation (not synchronized)

By selecting the respective DTM with the right mouse key and the command " Separate connection", the contents of the DTM parameter window disappears and the information " Online connection required" appears.



Fig. 13: DTM view VEGAPULS 62 online operation separated connection (not synchronized)

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Information:

Detailed explanations on parameter adjustment and project creation are available in the online help of PACTware and the DTMs. Also consult the operating instructions manual of the corresponding instrument for setup and correct parameter adjustment.



6 Maintenance and fault rectification

6.1 Maintenance/Update

PACTware and VEGA DTMs are maintenance free. For the purpose of error removal or integration of new functions, software updates will be available in certain cases. When new sensor types become available, the suitable DTMs will be included in the current DTM Collection which can be downloaded from the Internet. Information on our homepage: www.vega.com.

6.2 Rectify faults

If glitches occur, PACTware and VEGA DTM generate their own fault messages with corresponding explanations.

Fault messages generated in the sensor and sent to the DTM are described in the corresponding sensor operating instructions manual or in the online help of the DTM.



7 Deinstallation of PACTware/VEGA DTMs

7.1 Deinstallation procedure

If you want to deinstall PACTware or the DTM Collection on your PC, proceed as follows:

- Select item " Software" in the Control Panel (can be reached via " Start - Settings - Control Panel").
- 2. Select the entry " PACTware" or " VEGA-DTM" from the list and push the button " Modify/Remove".
- 3. Carry out the deinstallation in the way suggested by the assistant and complete the procedure with a Windows restart.

7.2 Disposal

Please dispose of the data carriers and the packaging material via specialised recycling companies.



8 Supplement

8.1 System requirements

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Haraware			
Processor	Intel Pentium/AMD 1 GHz or higher		
Memory	At least 1 GB RAM or higher		
Hard disk	At least 1 GB free memory		
Mouse	Microsoft-compatible		
Resolution of the graphic	at least 1024 x 768		
Interfaces	RS232/USB/Ethernet		
Software			
Operating system	Windows 10 (32 and 64 Bit), Windows 11		
Additional software	Microsoft .NET Framework 3.5 and 4.6.1		

8.2 License agreements

8.2 License agreement for VEGA DTM Collection

The DTM Collection consists of the actual software and - depending on the scope of delivery - the accompanying storage media as well as the corresponding documentation, such as online help, etc.

This end user licence agreement is a contract between the user (either as a natural person or a legal entity) and VEGA Grieshaber KG, Schiltach (VEGA) for the software product.

VEGA DTM Collection.

The **VEGA DTM Collection** is available as "Standard version" or "Full version". In the "Standard version", all standard functions are available. In the "Full version", the storing and printing of data recorded in the sensor, such as measured values, events or echo curves is also possible. The "Full version" also contains the programs "DataViewer" as well as "Tank Calculation".

When the user installs, copies or otherwise uses the **VEGA DTM Collection**, he accepts the following regulations and declares that he has read and understood all requirements and regulations.

8.2 Agreement

VEGA makes the **DTM Collection** available as free-of-charge "Standard version" including Online help via the Internet. The DTM Collection is also available as "Standard version" on DVD. The DTM Collection as "Full version" is only available on DVD.

The **DTM Collection** as "Standard version" is available for free-of-charge use. For the DTM Collection as "Full version" a one-time license fee must be paid. The content of the license agreement for both versions depends on the regulations of this agreement.

8.2 Rights of the user

The **DTM Collection** as "Standard version" can be copied and used on any number of computers. The DTM Collection as "Full version" can be copied and installed on several computers, but cannot be used by more than one user at the same time.

8.2 Warranty

For the DTM Collection as "Standard version", VEGA is only liable for intention and gross negli-



gence.

8.2 Restrictions

The user agrees to neither change, reverse-engineer or compile the software nor extract any its parts. The user agrees to neither rent out or lease the software nor use the software in ways deviating from the regulations of this agreement or allow third parties to do so.

On the basis of this user agreement, the user is authorized to transfer his rights to the **DTM Collection** as "full version" to third parties, under the condition that the complete software product is transferred (including all components, the storage media and the printed material) and that the third party agrees to the terms of this user agreement before using the software product. The user is obliged to make a written agreement with the third party that corresponds to the regulations of this agreement.

8.2 Right of termination

Notwithstanding other rights, VEGA is authorized to terminate this user agreement if the user violates the regulations of the agreement. In such case, the user is obliged to deinstall the software immediately and destroy or give back to VEGA all copies of the software product and all of its components, particularly the software product certificates.

8.2 Copyright

The proprietary rights and the copyright to **DTM Collection** (including the accompanying printed material and all copies) belong to VEGA or its suppliers and are protected in particular by German copyright laws and international copyright agreements as well as relevant international property rights agreements, in particular TRIPS, RBÜ and WCT, along with other laws and agreements on intellectual property.

8.2 Miscellaneous

As far as no other regulations are mentioned elsewhere in this document, the general terms of sale, delivery and payment of VEGA (www.vega.com/agb) apply – these are an inseparable component of the user agreement and the user must agree to abide by them. German law applies here under exclusion of international civil law. Place of jurisdiction is Mannheim.



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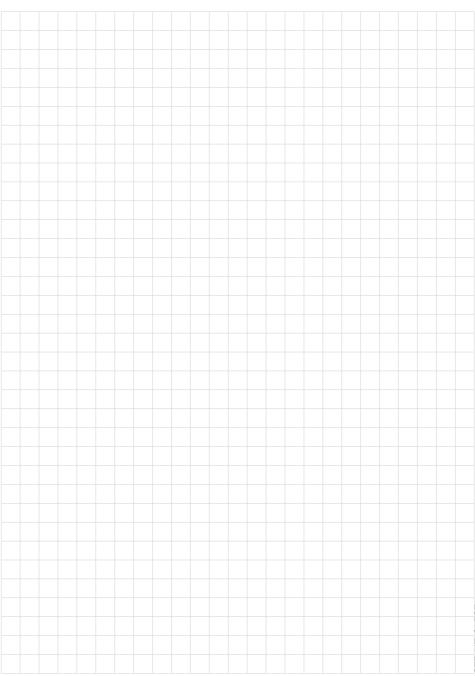
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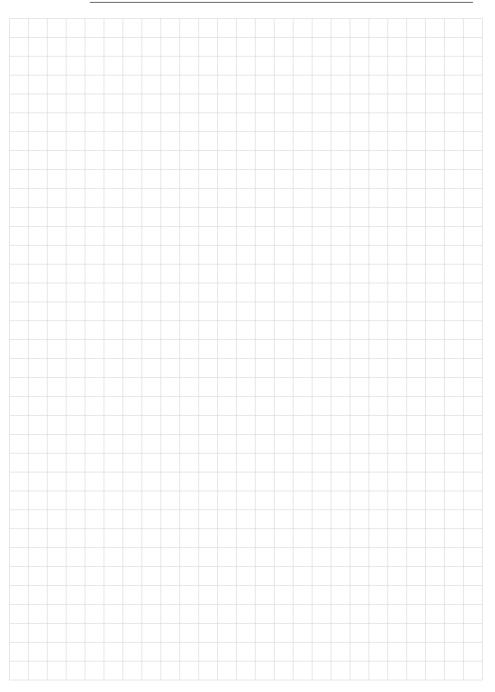
VEGACONNECT 10











Printing date:



All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Subject to change without prior notice

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