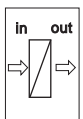
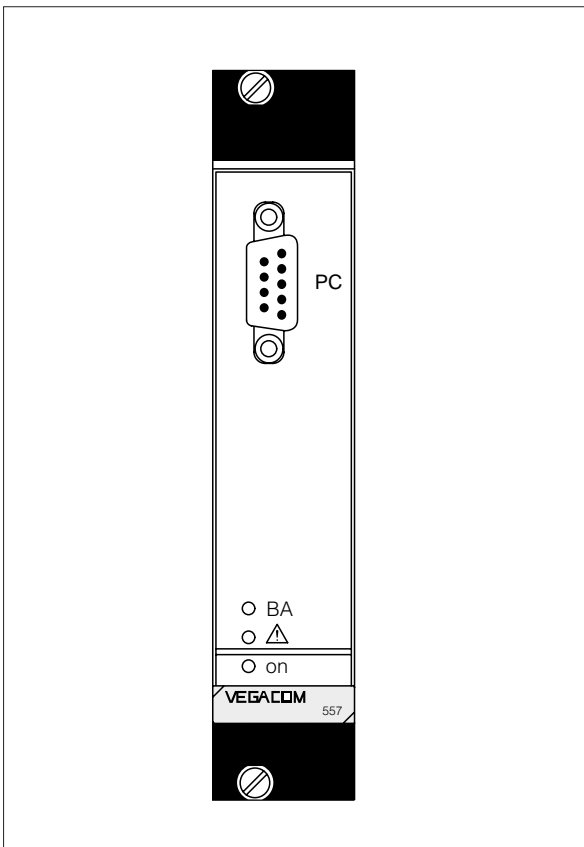


Operating Instructions

VEGACOM 557

Modbus protocol



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Safety information

Please read this manual carefully, and also take note of country-specific installation standards (e.g. the VDE regulations in Germany) as well as all prevailing safety regulations and accident prevention rules.

For safety and warranty reasons, any internal work on the instruments, apart from that involved in normal installation and electrical connection, must be carried out only by qualified VEGA personnel.

Note Ex area

Please note the approval documents (yellow binder), and especially the included safety data sheet.

1 Product description

1.1 Application

The VEGACOM 557 is an efficient and easy-to-use interface converter (Gateway) for your measurement applications. It is used for conversion of the VEGA-specific protocols of DISBUS and LOGBUS into standard data formats.

The existing version is used for connection of level or pressure measuring systems to modbus compatible systems such as

- processing systems (DCS)
- personal computers (PC)
- stored program control (PLC).

In addition, it is used for connecting a PC for configuration or visualisation via the VEGA adjustment software.

If connection is made to modbus compatible systems, there is the possibility of calling up measurement data and status information of the measuring systems via the master of the Modbus system. The coupling of the Modbus is made via the connections on the rear of the instrument. This data traffic requires that special measures (described in this manual) be taken in setting up the master of the Modbus. The data received in the master can be visualised there or further processed for control purposes. In restricted volume, signal conditioning, instrument-specific parameters can be outputted, modified and returned again.

Via the PC interface on the front of VEGACOM 557, the VEGA visualisation software "Visual VEGA" or the VEGA configuration software "VEGA Visual Operating" (VVO) can be operated. For these applications, the coupling between VEGACOM 557 and a PC is made directly with the connection cable between the RS 232 interface (PC) on the front of VEGACOM 557 and a standard Port (e.g. COM1) of your PC. There is also the possibility to provide a connection via modems.

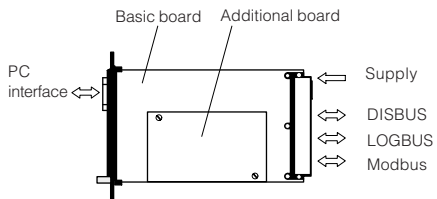
1.2 Configuration

The component VEGACOM 557 is designed in 19" technology with 5 TE width (1 TE = 5.08 mm) acc. to DIN 41 494. It can be used:

- in carrier BGT 596
- in VEGALOG 571 carrier BGT LOG 571
- in housing type 505.

The electrical connection of supply voltage, DISBUS and Modbus is made via a plug connection acc. to DIN 41 612 on the rear of the component. The connection to LOGBUS is made via an additional 5-pole plug connector mounted to the DIN socket.

A 9-pole SUB-D plug marked "PC" is located on the front panel of VEGACOM 557. It is used for connection of a PC via RS 232C to VEGACOM 557.



VEGACOM 557 connections

The component consists of two boards:

- the basic board
- the additional board.

On the basic board, you will find the power supply unit, the PC interface, the DISBUS/ LOGBUS interface as well as the connections for the Modbus.

The additional board is screwed to the basic board and includes the hardware of the Modbus interface as well as the protocol-specific programs.

1.3 Functions

The VEGACOM 557 interface converter can be integrated into the VEGA level or pressure measuring system in two different ways:

either

- as DISBUS participant
- or
- as LOGBUS participant.

In both cases, VEGACOM 557 operates as passive participant and provides measured data and status information of the connected VEGA signal conditioning instruments via the Modbus. By the use of a standardised protocol (Modbus), it is possible to connect via this interface any individual modbus compatible processing system.

Alternatively, it is possible to connect a PC with VEGA adjustment software via the SUB-D-plug marked "PC" on the front panel of VEGACOM 557. VEGA adjustment software is actually available as two different Windows applications.

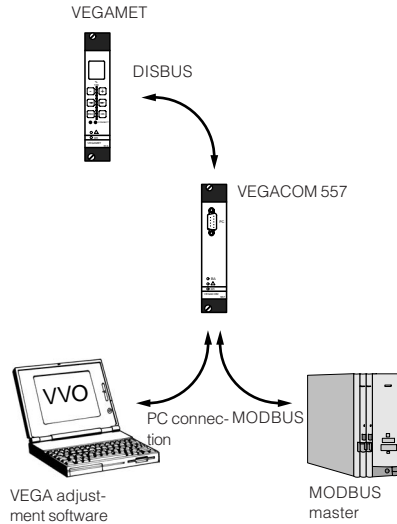
VVO = VEGA Visual Operating

For configuration and parameter adjustment of the connected VEGAMET or VEGALOG processing systems

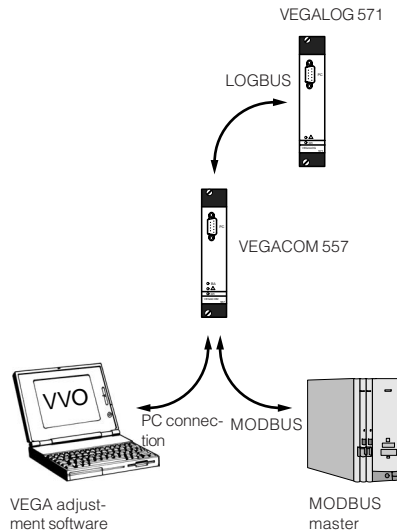
VV = Visual VEGA

For visualising and recording measured values of complete (multiple) vessel installations.

The following diagrams show the basic connection possibilities of VEGACOM 557.



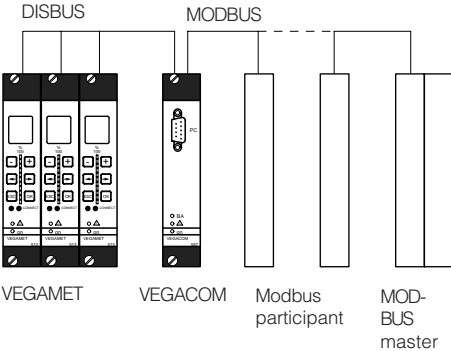
VEGACOM 557 as DISBUS participant



VEGACOM 557 as LOGBUS participant

VEGACOM 557 on DISBUS

VEGAMET series 500/600 signal conditioning instruments transmit via the DISBUS cyclically measured data and status information, so called PC/DCS telegrams. VEGACOM 557 receives as participant on the DISBUS these data and makes them available (in buffer memory) for collection via the Profibus DP.



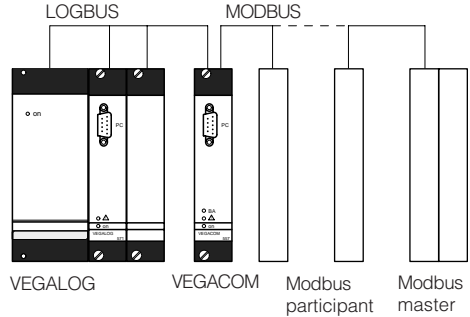
Connection VEGACOM 557 to DISBUS

If a PC is connected to the PC interface (front interface) of VEGACOM 557, this instrument transfers acyclically (on request by the VEGA configuration software VVO) measurement loop parameters from or to VEGAMET.

Max. two VEGACOM 557 can be connected to the same DISBUS. For clear identification, different instrument addresses should be assigned to both instruments.

VEGACOM 557 on LOGBUS

Data are exchanged continuously on the LOGBUS between the individual components of VEGALOG 571. VEGACOM 557 receives as participant of this LOGBUS PC/DCS telegrams including the measured values and status information and makes them available (in buffer memory) for collection via the Modbus.



Connection VEGACOM 557 to LOGBUS

If a PC is connected to the PC interface (front interface) of VEGACOM 557, this instrument transfers acyclically (on request by the VEGA configuration software VVO) measurement loop parameters from or to VEGALOG 571.

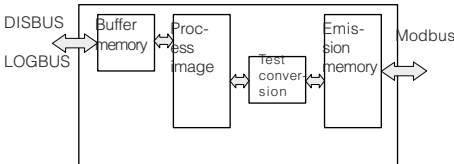
Max. two VEGACOM 557 can be connected to the same LOGBUS. The addressing for clear identification is made automatically on LOGBUS.

VEGACOM 557 on Modbus

The data communication between VEGACOM 557 and Modbus master is only carried out if initiated by the master, which can enquire the requested information by means of special commands.

The data from DISBUS/LOGBUS are first written in a buffer memory of VEGACOM 557. The data set is transferred from this buffer memory into a process image. The protocol conversion software enquires the stored data cyclically from the individual storage areas.

The data sets are checked and converted into the Modbus data format. After the conversion, the data are transferred into the emission memory and are sent from there to the Modbus. The Modbus transmits the data to the DP-Master.



Function VEGACOM 557

VEGACOM 557 with VVO or VV

Direct connection

As an alternative to the Modbus communication, a PC can be connected via the PC interface (SUB-D-plug in the front panel of VEGACOM 557). By means of the adjustment and indicating software VEGA Visual Operating (VVO), the parameter adjustment can be made on the signal conditioning instruments

connected to VEGACOM 557. The VEGA adjustment concept includes the user-friendly configuration and parameter adjustment of the measuring system or the sensor with the following instruments:

- VEGAMET series 500/600 signal conditioning instruments
- VEGALOG 571 processing system
- VBUS ultrasonic/radar sensors.

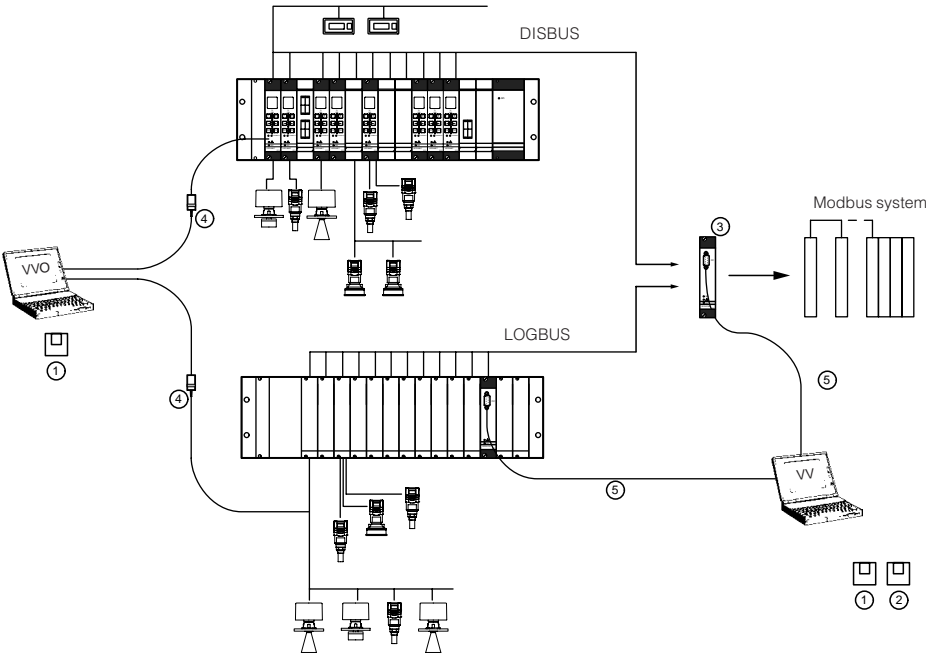
The adjustment is menu-driven and window oriented. No matter if a radar sensor, several connected signal conditioning instruments or a VEGALOG should be adjusted via the PC, the procedure is always the same. As another possibility, measured values and fault signals of the entire processing facility can be recorded and shown graphically by means of the visualisation software VISUAL VEGA (VV). Tools for processing and analysis of history data are also available.

The configuration of the measurement loop comprises, depending on the connected instruments, e.g. the determination of output functions or the configuration of individual outputs or inputs. The user-orientated editing of measurement loops is supported by graphic means, such as e.g. vessel drawings and pictographs that adapt to the selected general conditions and options. Thanks to graphic support, more complex parameter adjustments such as e.g., the input of a linearisation curve by means of index markers, can also be done with ease.

Connection via modem

The PC interface supports, beside the direct connection of a PC, also the operation via modems. With this additional function, remote parameter adjustment or remote diagnostics of VEGA systems via VVO are possible. Together with the visualisation software Visual VEGA, even remote visualisations can be carried out.

Complete measuring system with digital communication and networking



Measuring system with digital communication and networking

Explanation:

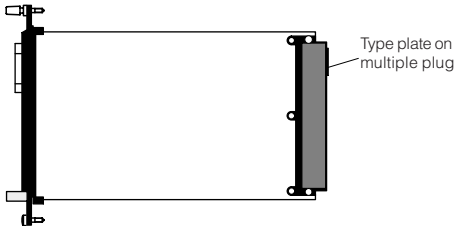
- 1 VEGA Visual Operating (VVO)
Adjustment software for the PC for user-friendly configuration and parameter adjustment of VEGA instruments
 - VEGALOG 571 directly via RS 232 connection cable on the CPU card or VEGACOM 557
 - several VEGAMET via VEGACOM 557 or individually via VEGACONNECT
 - VEGASON, VEGAPULS via VEGACONNECT on the signal line or on the sensor
- 2 Visual VEGA (VV)
PC visualisation software for presentation of measurement data from VEGA instruments in graphical or tabular form. Integration of individual measurement loops into groups, saving of fault signals and measured values (recorder function). Suitable for networks

- 3 VEGACOM 557
Interface converter for conversion of VEGA specific protocols into standard data formats. Suitable for connection to the DISBUS output of VEGAMET series 500/600 signal conditioning instrument or the LOGBUS of VEGALOG 571 processing system.
- 4 VEGACONNECT 2
Connection cable (interface converter) between VEGA instruments (VEGASON, VEGAPULS or VEGAMET) and a PC in conjunction with the adjustment software VEGA Visual Operating.
- 5 RS 232 connection cable (interlink cable)
Connection cable between PC and VEGALOG 571-CPU or VEGACOM 557

1.4 Type plate

Type plate

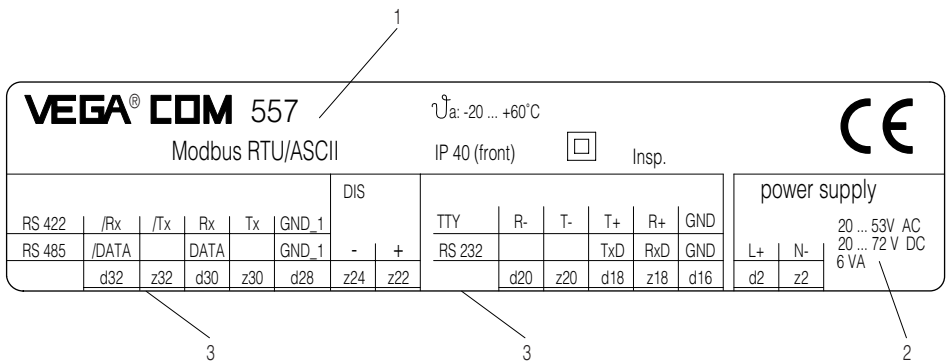
Before mounting and electrical connection, please check if you are using the correct version of VEGACOM 557. Please note the type plate, located below the multiple plug.



The type plate contains important data required for electrical connection. The configuration and the components of the type plate are explained in the illustration below.

Note:

The serial number of your VEGACOM is on the rear of the plug connector.



- 1 Version: MODBUS RTU/ASCII
- 2 Supply voltage
- 3 Terminal assignment of the possible interface to MODBUS

1.5 Technical data

Power supply

| | |
|-------------------|---|
| Supply voltage | $U_{nom} = 24 \text{ V AC (20 ... 53 V), 50/60 Hz}$ or $= 24 \text{ V DC (20 ... 72 V)}$ |
| Power consumption | approx. 6 VA |
| Fuse | 1 A, slow-blow |

Electrical connection

| | |
|---|---|
| Component | multiple plug acc. to DIN 41 612, series F 48 pole (d, b, z) with coding holes |
| Module in carrier BGT 596 or BGT LOG 571 | suitable multipoint connector acc. to DIN 41 612 with connection via standard technologies |
| Housing type 505 | via screw terminals max. $1 \times 1.5 \text{ mm}^2$ |

Indicating elements

| | |
|--------------------|-----------------|
| LED in front panel | |
| - green "BA" | Modbus activity |
| - red | failure |
| - green "on" | operating mode |

Meas. data input DISBUS

| | |
|-------------------|------------------------------------|
| Data transmission | DISBUS (digital data transmission) |
| Connection cable | 2-wire standard cable (shielded) |
| Cable length | max. 1000 m |

Measuring data input LOGBUS

| | |
|-------------------|------------------------------------|
| Data transmission | LOGBUS (digital data transmission) |
| Connection cable | connection via BUS-plug |

PC interface

| | |
|---------------------------|--|
| Interface standard | RS 232C |
| Cable length | max. 15 m |
| Transmission rate in baud | 300, 600, 1200, 2400, 4800, 9600 , 19200, 38400 |
| Transmission format | 8 data bits, 1 stop bit, no parity or even parity |
| Plug on front panel | SUB-D-plug connector, 9 pole, pins |

Modbus interfaces

| | | | | |
|---------------------|--|--------|--------|--------|
| Interfaces | RS 232 | RS 422 | RS 485 | TTY |
| Cable length | 15 m | 1200 m | 1200 m | 1000 m |
| Connection cable | 3-wire | 5-wire | 3-wire | 4-wire |
| | twisted in pairs, shielded | | | |
| Transmission mode | serially asynchronous, half-duplex | | | |
| Transmission rate | 300; 600; 1200; 2400; 4800; 9600; 19200; 38400 baud | | | |
| Galvanic separation | up to 0.5 kV | | | |

Modbus RTU-mode

| | |
|----------------|---|
| Coding system | 8 bits binary, hexadecimal |
| Number of bits | 1 start bit, 8 data bits, 1 (0) parity bit, 1 stop bit |
| Parity | NONE, ODD, EVEN |
| Backup | CRC - 16 |

Modbus ASCII-mode

| | |
|----------------|---|
| Coding system | hexadecimal, ASCII-character |
| Number of bits | 1 start bit, 8 (7) data bits, 1 (0) parity bit, 1 stop bit |
| Parity | NONE, ODD, EVEN |
| Backup | LRC |

Electrical protective measures

| | |
|--------------------------------------|--------------------------|
| Protection: | |
| not mounted | IP 00 |
| in carrier BGT 596 or BGT LOG 571 | |
| - front side completely equipped | IP 40 |
| - upper and lower side | |
| BGT 596 | IP 00 |
| BGT LOG 571 | IP 20 |
| - wiring side | IP 00 |
| in housing type 505 | |
| - front side | IP 40 |
| - other sides | IP 30 |
| Protection class | II (in housing type 505) |
| Overvoltage category | II |

Electrical separation measures

| | |
|---|-------|
| Reliable separation acc. to VDE 0106, part 1 between power supply, LOGBUS, DISBUS, PC-connection and respective interface | |
| - reference voltage | 250 V |
| - test voltage | 2 kV |

CE conformity 

| | |
|---|---------------------|
| VEGACOM 557 meets the protective regulations of EMC (89/336/EWG) and NSR (73/23/EWG). The conformity has been judged acc. to the following standards: | |
| EMC Emission | EN 50 081 - 2: 1993 |
| Susceptibility | EN 50 082 - 2: 1995 |
| NSR | EN 61 010 - 1: 1993 |

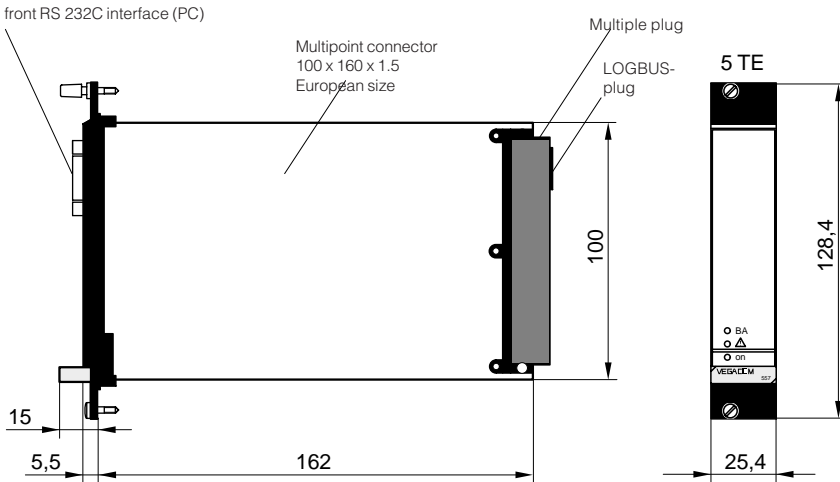
Ambient conditions

| | |
|-----------------------------------|---------------------------------------|
| Permissible ambient temperature | -20°C ... +60°C |
| Storage and transport temperature | -20°C ... +85°C |
| Humidity | 93 %, T = 40°C acc. to DIN/IEC 68-2-3 |
| Shock | 2 ... 100 Hz, 0.7 g |

Mechanical data

| | |
|-------------------------|---|
| Series | module unit for - carrier BGT 596 - carrier BGT LOG 571 - housing type 505 |
| Dimensions, not mounted | W = 25.4 mm (5 TE), H = 128.4 mm, D = 166 mm |
| Weight | approx. 550 g |

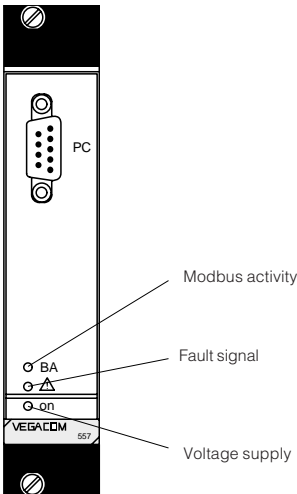
1.6 Dimensions



1.7 Indicating and adjustment elements

As diagnostic aid, VEGACOM 557 is equipped with three LEDs. These are located on the instrument front panel. In addition, the basic board, as well as the additional board of VEGACOM 557 are equipped with a number of switches (DIP switch or hook switch) for configuration of the available interfaces.

Indicating elements/Diagnostics LEDs



Front of VEGACOM 557

Meaning of the LEDs:

VEGA ASCII active:

- green LED lights in case of valid data exchange

Fault signal:

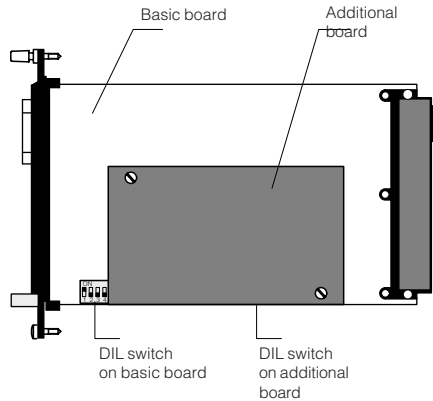
- red LED flashing: DISBUS/LOGBUS-error
- irregularly flashing: no PC/DCS outputs assigned
- permanent light: hardware error or special function "Freeze Mode"

Voltage supply:

- green LED lights, operating voltage on.

Adjustment elements

The adjustment elements are located on the basic board. A 6-pole DIL switch block on the basic board is used for adjustment of the front PC interface.



Side view of VEGACOM 557

Special function "Freeze Mode"

For diagnostic purposes on VEGA processing systems VEGAMET and VEGALOG, the process image can be "frozen" in VEGACOM 557 with the adjustment software VVO. This enables the possibility of carrying out maintenance work on the VEGA system without disturbing the higher-priority processing system.

For activating the Freeze Modes, a PC must be connected directly to the PC interface of VEGACOM 557 and the Freeze Mode must be switched on under VVO in the menu "Configuration - Measuring system".

Attention:

Before activating this function, it must be ensured that during this mode, no disastrous consequences are to be expected for production processes (during this mode, no level values, etc., are updated).

2 Mounting and electrical connection

2.1 Mounting instructions

The gateway VEGACOM 557 can process measured data and status information in two different ways:

- via DISBUS (from measuring systems with VEGAMET)
- via LOGBUS (from measuring systems with VEGALOG).

For DISBUS configurations, VEGACOM 557 can be either mounted into carrier BGT 596 or housing type 505.

In conjunction with LOGBUS, VEGACOM 557 is mounted into carrier BGT LOG 571. The location is individually selectable, the system adapts automatically when rebooting (autoconfiguration).

Coding

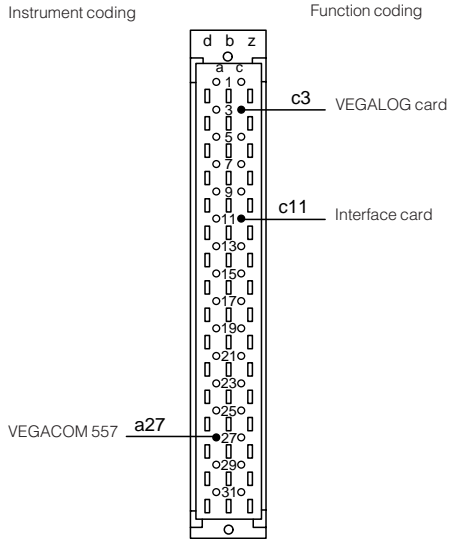
A mechanical coding system prevents mixing up the different module cards in the carrier or in the housing.

The coding system consists of:

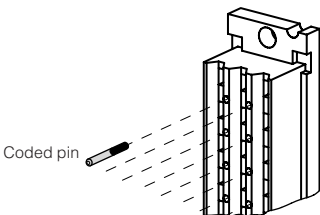
- three coded pins in the multipoint connector
- three holes in the multiple plug of VEGACOM 557.

The coded pins are attached to the module or the housing. The plug-in socket must be equipped by the user with the coded pins according to the following table and diagram.

| | Instrument coding | Function coding |
|-------------|-------------------|-----------------|
| VEGACOM 557 | a27 | c3/c11 |



Positioning of the coded pins



Plug-in socket of VEGACOM 557

2.2 Mounting in carrier and housing

BGT 596 or BGT LOG 571

For mounting, a slot module must be provided at the location. A slot module consists of:

- a multipoint connector acc. to DIN 41 612, series F, 33-pole (d, b, z)
- two screws
- three coded pins
- two guide rails.

The multipoint connector is available in the following versions:

- Wire-Wrap, standard connection
1.0 mm x 1.0 mm
- plug connection
2.8 mm x 0.8 mm
- Termi-Point standard connection
1.6 mm x 0.8 mm
- soldering connection
- screw terminals 0.5 mm².

For mounting the module, please note the operating instructions of the carrier.

Housing type 505, type 506

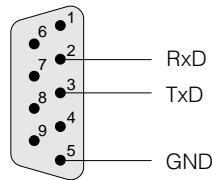
This housing is already equipped with a multipoint connector. Before mounting, please check if the housing is equipped with a power supply unit or not.

The connection is made via screw terminals with max. 1.5 mm². Further details are stated in the operating instructions "Housing type 505, type 506".

2.3 Wiring plan VEGACOM 557

PC interface in front panel (SUB-D-plug)

The PC interface of VEGACOM 557 is used exclusively for connection of computer systems with VEGA adjustment software via a COM-Port. The PC interface is based on the RS 232C standard and is assigned as follows.



Pin assignments of the PC interface of VEGACOM 557

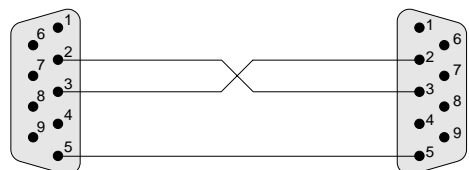
| Pin | Description | I/O |
|-----|-------------------|-----|
| 2 | RxD receive data | I |
| 3 | TxD transmit data | O |
| 5 | GND ground | - |

Note:

With a direct connection to the computer system, VEGACOM 557 works without hardware handshake.

Direct connection

For direct connection of a PC to the PC interface of VEGACOM 557, the interlink (or a standard) cable available from VEGA with 9-pole plugs on both ends should be used. The pin assignments of the interlink cable are shown in the diagram.



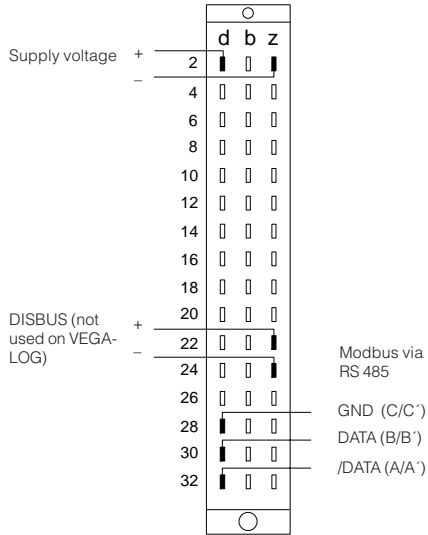
Wiring proposal for interlink cable

Connection via modem

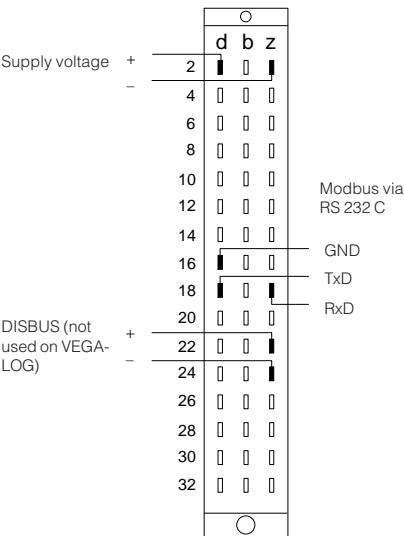
For remote parameter adjustment, it is possible to connect the PC interface via a modem. In such a case, the modem cable that comes with the respective modem should be used. Modem operation is supported by VEGA-COM 557 from software version 2.11. Further information on the remote parameter adjustment is stated in the operating instructions "Remote parameter adjustment".

Connections of the multiple plug (rear)

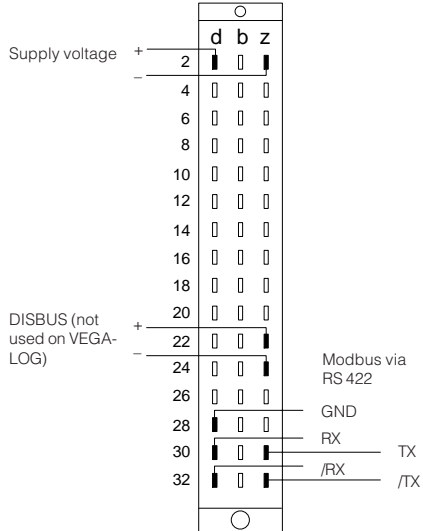
For connection of VEGACOM 557 to the existing Modbus system, all standard interfaces are available. The power supply of the instrument and the connection to the VEGA system remain always the same. The following illustrations show the respective terminal assignments of the Modbus depending on the selected interface type.



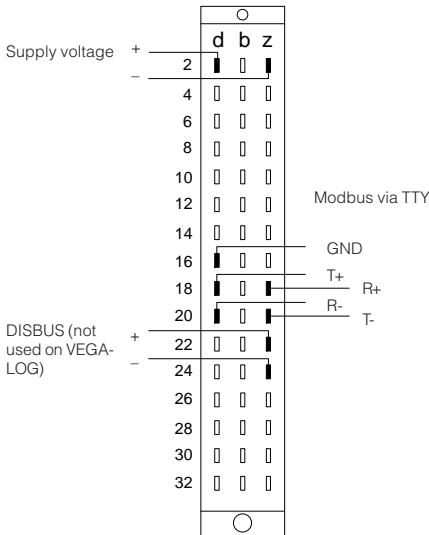
Wiring regulation for Modbus connection via **RS 485**



Wiring regulation for Modbus connection via **RS 232 C**



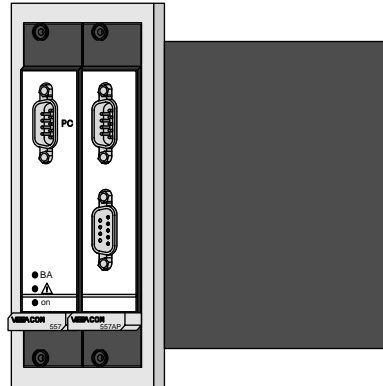
Wiring regulation for Modbus connection via **RS 422**



Wiring regulation for Modbus connection via **TTY**

2.4 Mounting and installation instructions with VEGACOM 557AP

As an option, VEGACOM 557 can be extended with the adapter print VEGACOM 557AP. The adapter print VEGACOM 557AP consists of a module card with 5 TE width and two modules connected to a back-panel print for carrier BGT 596 or BGT LOG 571.



VEGACOM 557 with adapter print VEGACOM 557AP

With the adapter print card it is possible to put the Modbus interfaces of VEGACOM 557 at the front of the carrier. On the front of the adapter print card, the Modbus interface is available as a 9-pole SUB-D-plug and as 9-pole SUB-D-socket. The required interface type must be stated when ordering VEGACOM 557AP.

- The following interface types are available::
- RS 232
 - RS 422
 - RS 485
 - TTY

Make sure that also VEGACOM 557 is set to the same interface type (DIL-switch 1 on the additional board) as VEGACOM 557AP. The pin assignments of SUB-D-plug and SUB-D-socket are listed in the tables.

Pin assignments VEGACOM 557AP

| Pin-Nr. | RS 232 | RS422 | RS485 | TTY |
|---------|--------|-------|-------|-----|
| 1 | - | - | - | - |
| 2 | RXD | RX | - | T+ |
| 3 | TXD | TX | DATA | R+ |
| 4 | - | - | - | - |
| 5 | GND | GND | GND | GND |
| 6 | - | - | +5V | - |
| 7 | - | /RX | - | T- |
| 8 | - | /TX | /DATA | R- |
| 9 | - | - | - | - |

9-pole SUB-D-plug

| Pin-Nr. | RS 232 | RS422 | RS485 | TTY |
|---------|--------|-------|-------|-----|
| 1 | - | - | - | - |
| 2 | TXD | RX | - | T+ |
| 3 | RXD | TX | DATA | R+ |
| 4 | - | - | - | - |
| 5 | GND | GND | GND | GND |
| 6 | - | - | +5V | - |
| 7 | - | /RX | - | T- |
| 8 | - | /TX | /DATA | R- |
| 9 | - | - | - | - |

9-pole SUB-D-socket

Mounting instructions for VEGACOM 557AP

The two modules connected to the back-panel print consist of:

- two multipoint connector acc. to DIN 41 612, series F, 48-pole (d, b, z) connected via the back-panel print
- four screws
- six coded pins
- four guide rails

Coding

The coding should be carried out for both modules as described in chapter "2.1 Mounting in carrier and housing".

Module position

BGT LOG 571

The module position is individually selectable, the VEGALOG 571 processing system adapts automatically through autoconfiguration during the first booting. After autoconfiguration, the slot location of the cards must never be changed.

BGT 596

The module position is individually selectable. Please note that the two connected modules cover a width of 10 TE (5 TE for VEGACOM 557 plus 5 TE for the adapter board VEGACOM 557AP).

Connection VEGACOM 557AP

BGT LOG 571

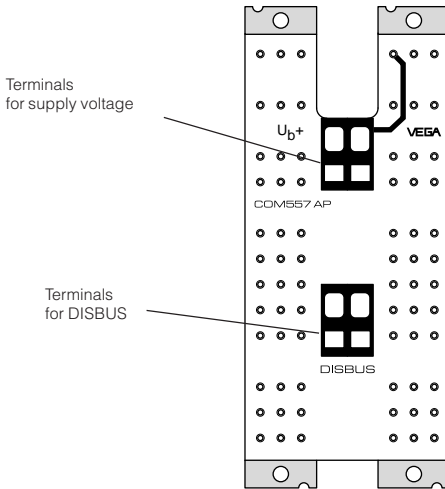
With the bus board (part of the carrier BGT LOG 571) connection to LOGBUS is made automatically when inserting VEGACOM 557.

The voltage supply of the card must be provided separately. For this reason, a 2-pole terminal with tension spring connection, called U_b , is available on the back-panel print. The permissible operating voltage of VEGACOM 557 should be observed. In case of DC voltage supply, the correct polarity should be noted!

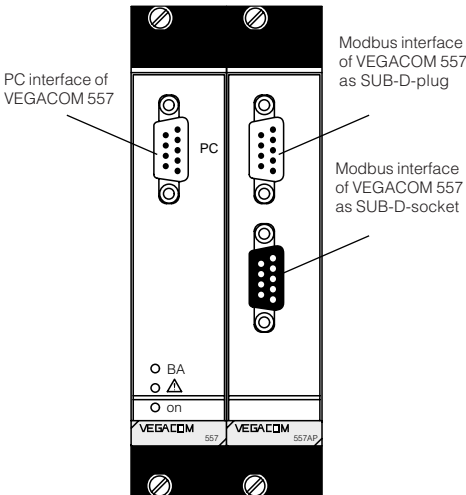
BGT 596

When operating VEGACOM 557 as DISBUS participant, the DISBUS must be wired in addition to the supply voltage.

For the two cables of the DISBUS, a 2-pole terminal with tension spring connection is available. Make sure that the polarity is correct!



View of back-panel board (rear of the carrier)



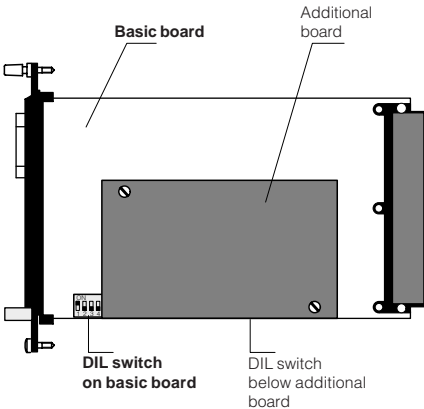
Front view with SUB-D-connections of VEGACOM 557 and VEGACOM 557AP

3 Switch settings on VEGACOM 557

For adjustment of the interfaces or the BUS parameters of the PC interface and the Modbus interfaces, various DIL switches are provided on VEGACOM 557. Before inserting VEGACOM 557 into the carrier or the housing, the DIL switches must be set according to the user-specific data. The data of these settings will be effective with the next initialization (switching on of voltage).

3.1 Adjustment of the PC interface

For adjustment of the RS 232 PC interface in the front panel of VEGACOM 557, a 6-pole DIL switch block is located on the basic board. The PC interface is used for communication between a PC and VEGACOM 557 by means of the adjustment software VVO or the visualisation software VV.



Side view of VEGACOM 557

The following adjustments are carried out via the above mentioned DIL switch block.

Data format

Parity can be switched from **even** to **no** parity (note for VVO including version 2.15, even parity is compulsory).

Instrument number

Only relevant when operating two VEGACOM 557 on the same DISBUS. If two VEGACOM 557 are operated on the DISBUS, then different instrument numbers have to be assigned.
Not relevant for operation on LOGBUS.

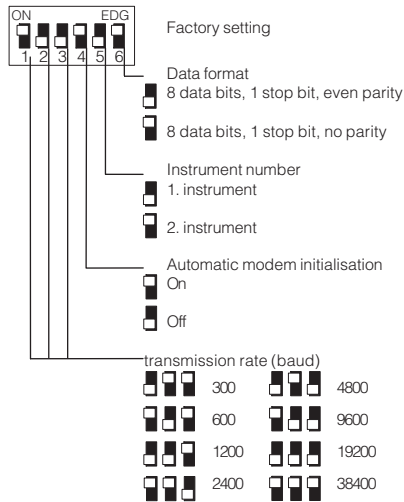
Automatic modem initialization

In position "ON" the modem will be initialized automatically when connecting it to the VEGACOM interface.

Transmission rate

For VVO or VV, the transmission rate must be set to 9600 baud.

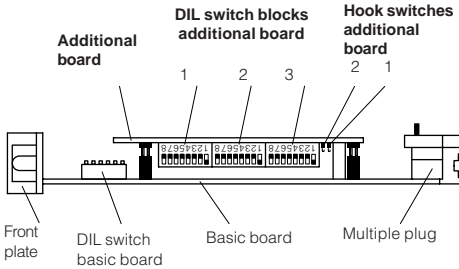
In the following diagram, you see all possible adjustment combinations for configuration of the PC interface.



Adjustment possibilities of the DIL switch on the basic board

3.2 Adjustment of the Modbus interface

Three 8-pole DIL switch blocks as well as two hook switches for configuration of the Modbus interface to the DCS or the PLC are located on the additional board.



Bottom view of VEGACOM 557

The following adjustments for the Modbus are made via these DIL-switch blocks:

Switch 1

- selection of the interface type
- activation of the bus termination
- selection of the protocol

Switch 2

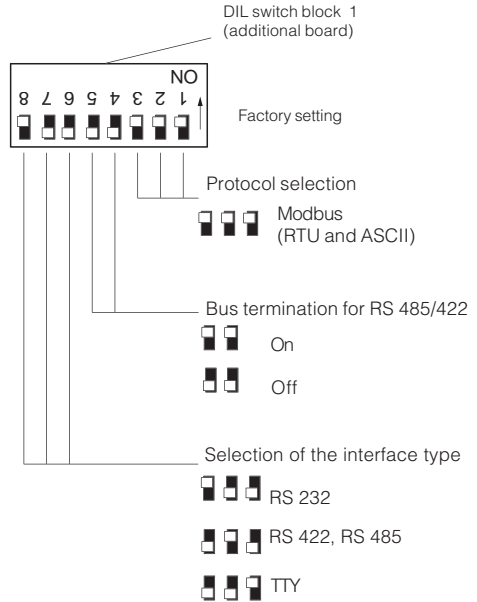
- selection of the baud rate
- number of data bits
- mode for parity bit
- protocol mode (Modbus)
- definition of the measured value image

Switch 3

- Modbus address of VEGACOM 557

Note:

When holding VEGACOM 557 for adjustment of the DIL-switches 1 to 3, the following switch representation can directly implemented.



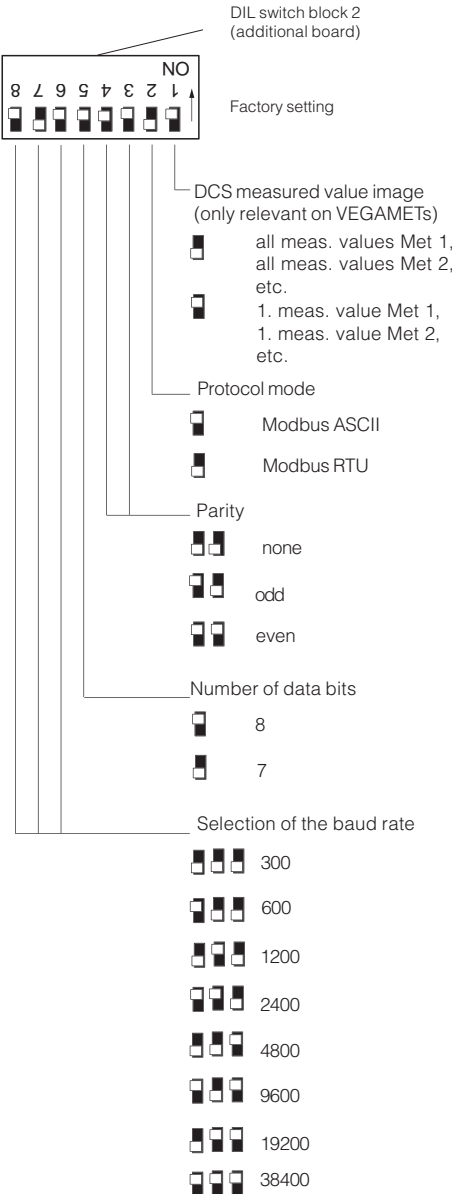
Adjustment possibilities for DIL switch block 1 on the additional board

Note:

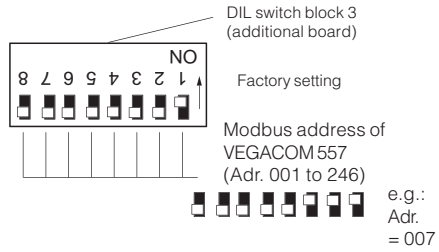
When selecting the interfaces TTY and RS 232, the hooks switches must also be set to the respective position.

Activation of the bus termination on RS 485 is necessary if VEGACOM 557 is the last participant on the Modbus. General rule: The first and the last bus participant must be operated with the bus termination activated.

When selecting interface RS 422, the bus terminator must as a rule be activated on VEGACOM 557.



Adjustment possibilities for DIL switch block 2 on additional board



Adjustment possibilities for DIL switch block 3 on additional board

Note:

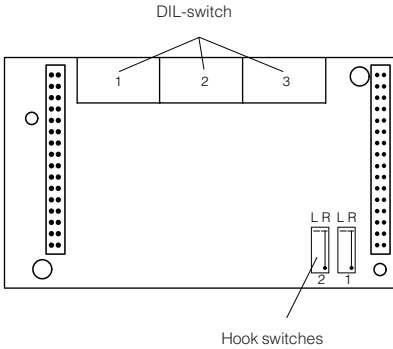
With the switch for the adjustment of the Modbus address (DIL-switch block 3), it is theoretically possible to adjust addresses in the range of 0 to 255. However, in reality only address 1 to 246 are directly adjustable. Address adjustments outside the range are converted as follows:

- Addr. 000 becomes Addr. 245
- Addr. > 247 become Addr. 245
- Addr. = 255 becomes Addr. 246

If VEGACOM 557 is used as replacement unit for VEGACOM 556, Addr. 245 has to be adjusted as Modbus address.

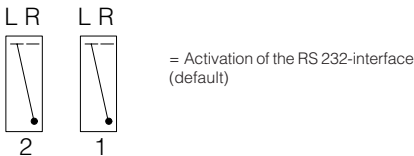
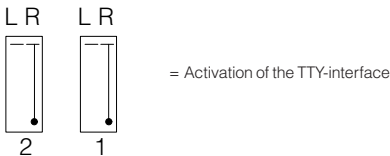
Hook switches (additional board)

The hook switches on the additional board enable the selection between TTY and RS 232 interface. The additional print has to be removed from the basic print to modify the settings.



View to the removed additional print

Depending on the requirements, the Modbus interface can be used as TTY interface but also as RS 232 interface (using the hook switches). By default, VEGACOM 557 is delivered with activated RS 232.



Note:

L = left position, R = right position

Allocation of the switch positions (hook switch on the additional print)

4 Data image in VEGACOM 557

VEGACOM 557 collects the measured values of the VEGA signal conditioning instruments VEGAMET 509, 512, 513, 514, 515 and 614 (via DISBUS) or VEGALOG 571 (via LOG-BUS) and puts them in the temporary memory for collection via the Modbus. The method of storing the measured values (for the higher-priority processing system) in the VEGACOM 557 temporary memory differs depending on the selected configuration. It depends on whether VEGACOM 557 is connected to the DISBUS or the LOGBUS, and if DISBUS, also on the connected instrument type. However, it can also be modified by VEGACOM 557 itself via DIL switches.

Note

On the VEGAMET 513, 514, 515 and 614 signal conditioning instruments, as well as on the VEGALOG 571 processing system, the individual configuration of the DCS outputs with the adjustment software VVO is possible.

On VEGAMET 513, 514, 515 and 614 signal conditioning instruments as well as the VEGALOG 571 processing system, it is additionally possible to enquire the conditions of the contact inputs/ and outputs via VEGACOM 557.

The enquiry of the measured value is made through:

- Function code 04 (= Read Input Registers)

The enquiry of the switching conditions is made through:

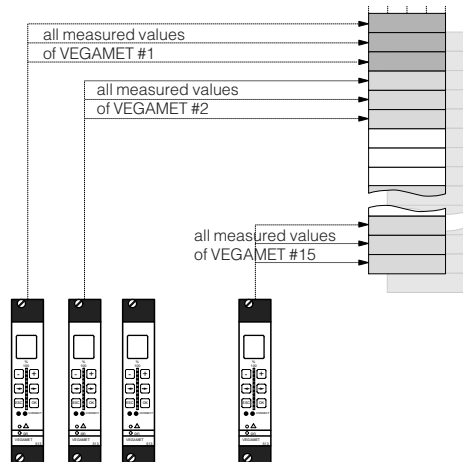
- Function code 01 (= Read Coil Status) or alternatively through
- Function code 02 (= Read Input Status).

For further details on the handling of the function codes 01, 02 and 04 see chapter "5 Setup".

4.1 Image of measured value when connected to DISBUS

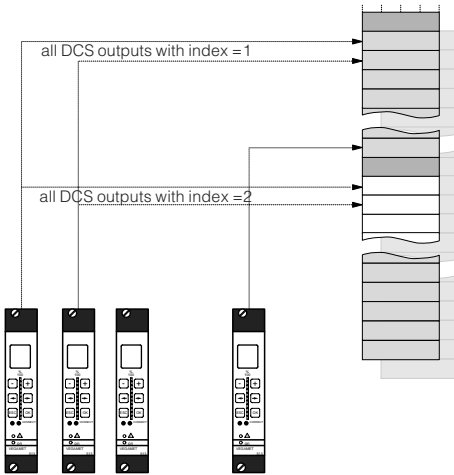
The addressing of the measured values for Modbus systems is "word-orientated". In VEGACOM 557 one measured value is represented by two words, the first word contains the real measured value, the next higher word the respective status information. In the standard, "register word" is used instead of the term "word". The addressing is made either through existing library enquiries of a PLC (e.g. Modicon) or by direct generation of the Modbus telegrams. Examples of valid register word addresses are shown in the following illustration. Especially when using Modicon, make sure that, for the library enquiry, the register address is increased by 1 with respect to the transmitted address on the Modbus.

As already mentioned, the storage of the measured values for VEGAMET signal conditioning instruments can be influenced by the user. Switch 1 of DIL-switch block 2 is decisive. If switch 1 is set to position "OFF", the measured values are grouped acc. to the VEGAMET addresses in ascending sequence.



Grouping of measured values acc. to VEGAMET-addresses

If switch 1 is set to position "ON", the measured values will be grouped acc. to DCS indices or channels.



Grouping of measured values acc. to DCS indices or channels

The following illustrations show in detail the possible memory mappings for the storage of measured values when connecting VEGACOM 557 to DISBUS.

Note:

When addressing register words, all addresses between 0 and 65 535 can be used for VEGACOM 557. For access to the intermediate storage, VEGACOM 557 generally uses only the last 3 digits of the address.

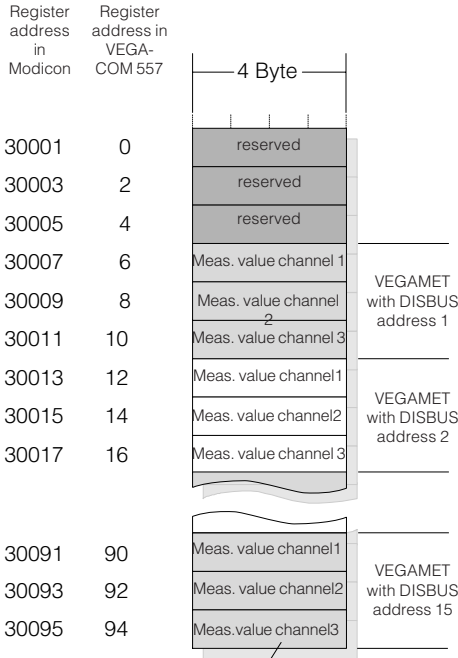
This means:

| Register address in Modicon | Register address on Modbus | Register address in VEGACOM 557 |
|-----------------------------|----------------------------|---------------------------------|
| 30 001 | 30 000 | 000 |
| 30 017 | 30 016 | 016 |
| 34 001 | 34 000 | 000 |
| 34 017 → | 34 016 → | 016 |

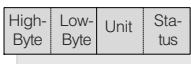
Addressing of measured value when connected to DISBUS with grouping acc. to VEGAMET address (switch 1 of DIL switch block 2 is in position OFF):

Case 1:

There are only instruments of type VEGAMET 509 or 512 connected.



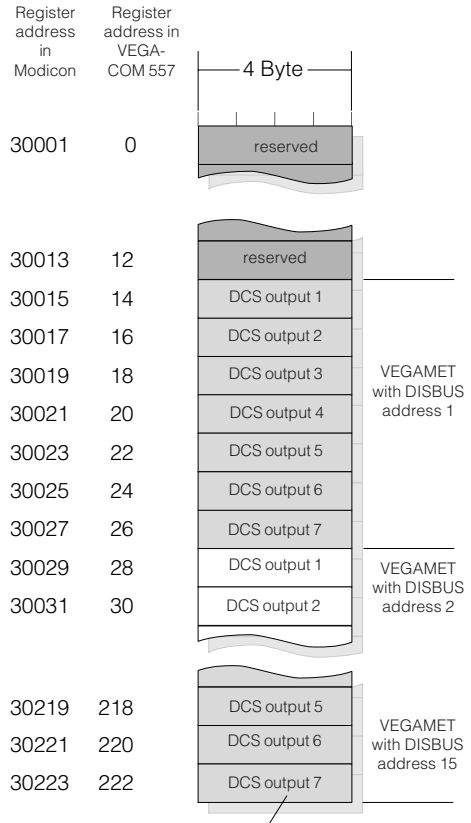
Meas. value Add. info



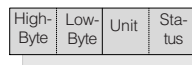
Grouping of measured values acc. to VEGAMET addresses on VEGAMET 509 or 512

Case 2:

There are only instruments of type VEGAMET 513, 514, 515 or 614 connected.



Meas. value Add. info



Grouping of measured values acc. to VEGAMET addresses on VEGAMET 513, 514, 515 or 614

Note:

A complete overview of the process image of VEGACOM 557 can be found in supplement A at the end of this manual.

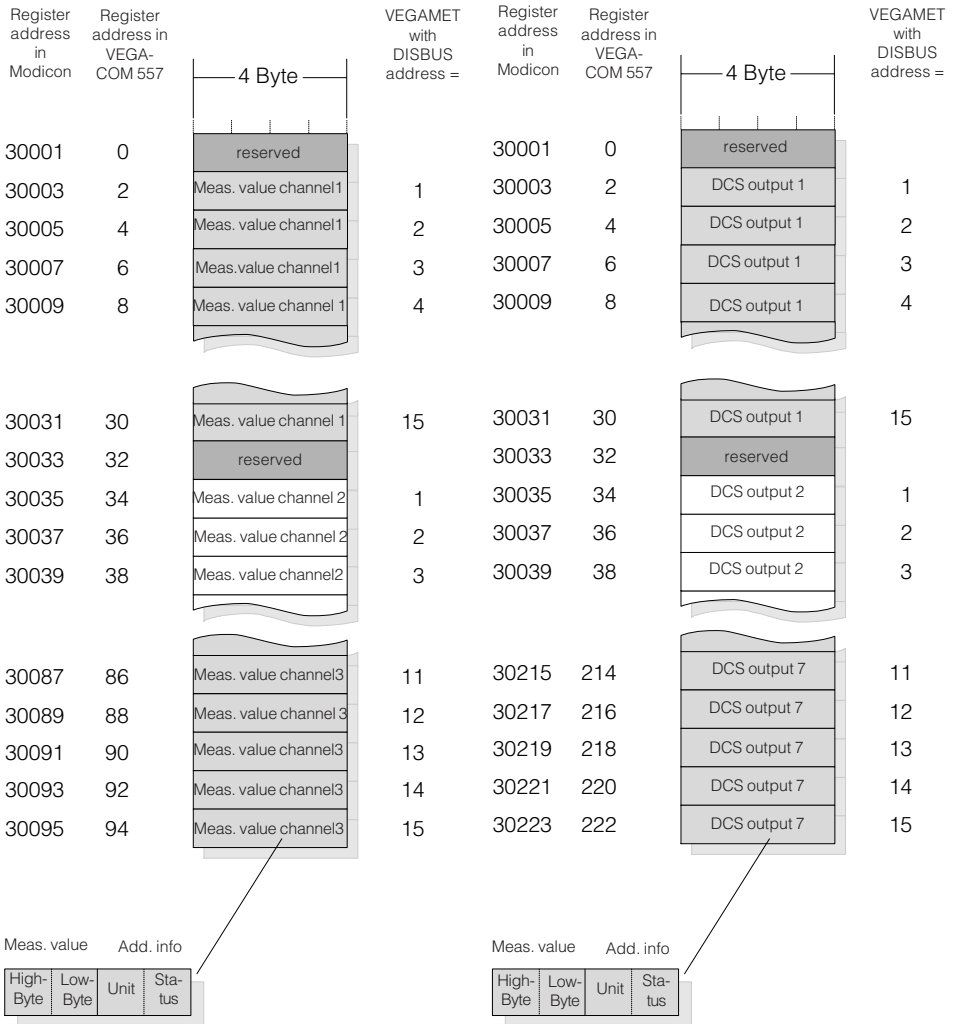
Addressing of measured value when connected to DISBUS with grouping acc. to DCS indices (switch 1 of DIL switch block 2 is in position ON):

Case 1:

There are only instruments of type VEGAMET 509 or 512 connected.

Case 2:

There are only instruments of type VEGAMET 513, 514, 515 or 614 connected.



Grouping of measured values acc. to channel number on VEGAMET 509 or 512

Grouping of measured values acc. to DCS indices on VEGAMET 513, 514, 515 or 614

Note:

A complete overview of the process image of VEGACOM 557 can be found in supplement A at the end of this manual.

4.2 Image of the contact inputs/outputs on the DISBUS

Beside the previously described measured values, it is possible to transmit via the VEGACOM 557 also switching conditions of the VEGA signal conditioning instruments VEGAMET 513, 514 and 515.

These are:

- condition of the contact inputs (position of key switch etc.)
- condition of the contact outputs (relay or transistor outputs)

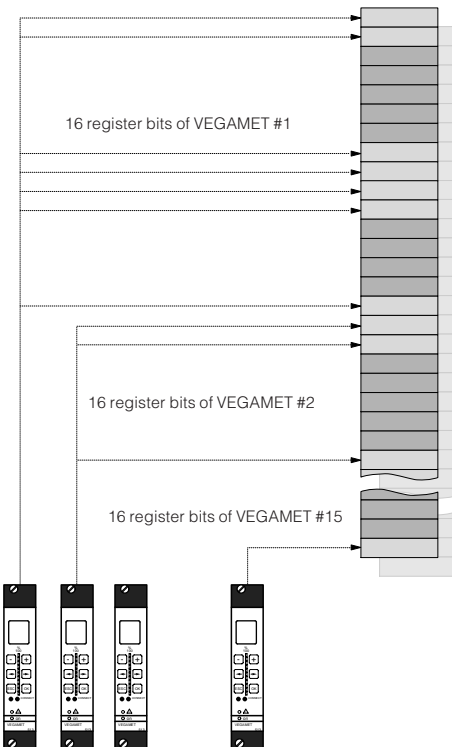


Image of the switching conditions in VEGACOM 557 on VEGAMET 513, 514, 515 or 614

In contrast to the image of measured values, the image of the switching conditions is "bit-orientated". In the standard, these status bits are also called "register bits". The addressing of the register bits for the Modbus system is therefore "bit-orientated". In VEGACOM 557, a switching condition is represented by one register bit, whereby all available information of a VEGAMET are stored within a related block of 16 register bits. The storage of a 16 register bit block within VEGACOM 557 is controlled via the setting of the DISBUS address on VEGAMET. The addressing by means of the processing system is either made via the existing library enquiries of a processing system (e.g. Modicon) or by direct generation of the Modbus telegrams.

Keep in mind that the number of enquired register bits per telegram should be always divisible by 8.

For the enquiry of the switching conditions, the functions codes 01 or 02 of VEGACOM 557 can be used for any input and output status.

Note:

When addressing register bits, all addresses between 0 and 65 535 can be used on VEGACOM 557. When accessing the intermediate memory, VEGACOM 557 uses generally only the last 3 digits of the address.

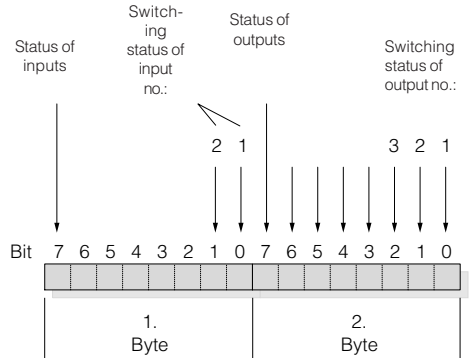
This means:

| Register address in Modicon | Register address in Modbus | Register address in VEGACOM 557 |
|-----------------------------|----------------------------|---------------------------------|
| 00 001 | 00 000 | 000 |
| 10 017 | 10 016 | 016 |
| 04 001 | 04 000 | 000 |
| 14 017 | 14 016 | 016 |

Addressing of the switching conditions when connected to DISBUS

Imagining the 16 register bits belonging to a VEGAMET as a 16 bit word, the following regulation results.

| Register address in Modicon | Register address in VEGA-COM 557 | 1 BIT | |
|-----------------------------|----------------------------------|-----------------|----------------------------------|
| 10001 | 0 | Input contact 2 | VEGAMET with DISBUS address = 1 |
| 10002 | 1 | Input contact 1 | |
| 10003 | 2 | reserved | |
| 10004 | 3 | reserved | |
| 10005 | 4 | reserved | |
| 10006 | 5 | reserved | |
| 10007 | 6 | reserved | |
| 10008 | 7 | Status: Inputs | |
| 10009 | 8 | Relay contact 1 | |
| 10010 | 9 | Relay contact 2 | |
| 10011 | 10 | Fail safe relay | |
| 10012 | 11 | reserved | |
| 10013 | 12 | reserved | |
| 10014 | 13 | reserved | |
| 10015 | 14 | reserved | |
| 10016 | 15 | Status: Outputs | VEGAMET with DISBUS address = 2 |
| 10017 | 16 | Input contact 2 | |
| 10018 | 17 | Input contact 1 | |
| 10019 | 18 | reserved | VEGAMET with DISBUS address = 15 |
| 10238 | 237 | reserved | |
| 10239 | 238 | reserved | |
| 10240 | 239 | Status: Outputs | |



The meaning of the individual bits is defined as follows:

Status of inputs:

- 0 = all inputs OK
- 1 = input status not available (no inputs configured or VEGAMET not available)

Switching status of inputs 1 and 2:

- 0 = input contact is open
- 1 = input contact is closed

Status of outputs:

- 0 = all outputs OK
- 1 = output status not available (no outputs configured or VEGAMET not available)

Switching status of outputs 1, 2 and 3 (output 3 corresponds to fail safe relay):

- 0 = relay is deenergised
- 1 = relay is energised

Note:

A complete overview of the process image of the switching status of VEGACOM 557 is given in supplement B at the end of this manual.

Addressing of the switching conditions in VEGACOM 557 on VEGAMET 513, 514, 515 or 614

4.3 Measured value image when connected to LOGBUS

The addressing of the measured values for Modbus systems is "word orientated". In VEGACOM 557 a meas. value is represented by two words, the first word includes the real meas. value, the next higher word the respective status information. In the standard, the designation "register word" is also used instead of the term "word". The addressing is either made via existing library enquiries of a PLC (e.g. Modicon) or by direct generation of Modbus telegrams.

Examples of valid register word addresses are shown in the following demonstration. Especially when using Modicon, make sure that the register address for the library enquiry is increased by 1 with respect to the transmitted address on the Modbus.

VEGALOG 571 can administrate up to 255 measurement loops. For transmission of measured values from a measurement loop, VEGALOG makes up to 255 DCS outputs available.

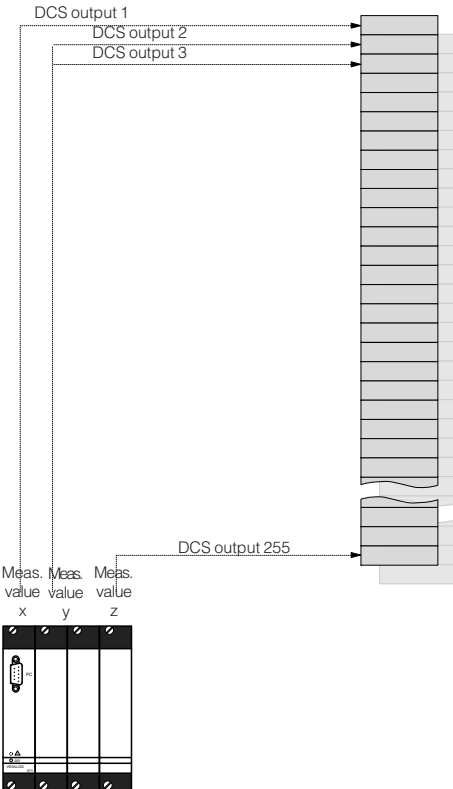
One or several DCS outputs with any index can be allocated to these measurement loops. The configuration of VEGALOG 571 is made with the VEGA adjustment software VVO. You define, via the selected PC/DCS output, where the respective measured values can be collected within the intermediate storage in VEGACOM 557.

Note:

When addressing register words, all addresses between 0 and 65 535 can be used with VEGACOM 557. When accessing the intermediate storage, VEGACOM 557 generally uses only the last 3 digits of the address.

This results in the following conversion table:

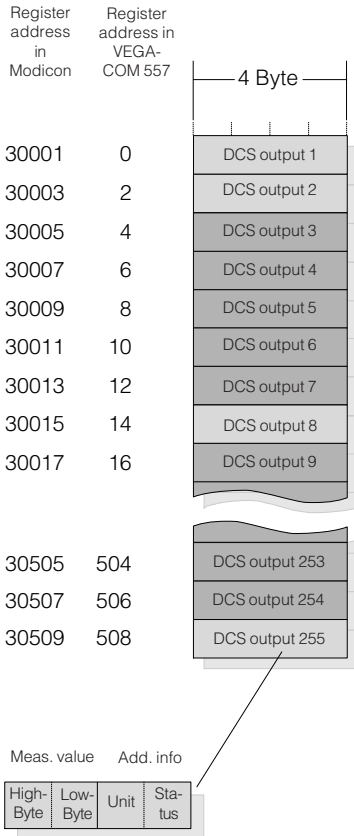
| Register address in Modicon | Register address on Modbus | Register address in VEGACOM 557 |
|-----------------------------|----------------------------|---------------------------------|
| 30 001 | 30 000 | 000 |
| 30 017 | 30 016 | 016 |
| 34 001 | 34 000 | 000 |
| 34 017 | 34 016 | 016 |



Measured value image when connecting to VEGALOG 571

Addressing of measured values when connected to LOGBUS

The measured value image when connected to LOGBUS is always sorted acc. to DCS outputs; the following demonstration shows the addressing of the intermediate storage via Modbus.



Addressing of measured values when connected to LOGBUS

Note:

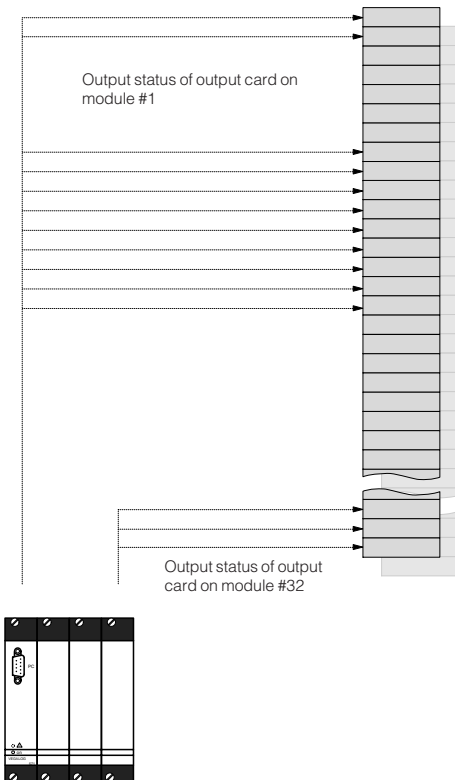
A complete overview of the process image of the measured values of VEGACOM 557 can be found in supplement A at the end of this manual.

4.4 Image of the contact outputs on LOGBUS

Beside the previously described measured values, it is also possible to transmit the switching status of VEGA processing system VEGALOG 571 through VEGACOM 557.

These are:

- status of the contact output of the AR cards (relay contacts)
- status of the contact outputs of the AT cards (transistor outputs)



In contrast to the image of measured values, the image of the switching status is made "bit orientated". In the standard, these status bits are also called "register bits". The addressing of the register bits for Modbus systems is therefore made "bit orientated". In VEGACOM 557, a switching status is represented by a register bit, whereby all available information of a VEGALOG output card of type AR or AT is saved within a related block of 16 register bits. The storage of a 16 register bit block within VEGACOM 557 results from the module position in VEGALOG 571.

The addressing by the guidance system is made either via existing library enquiries of a processing system (e.g. Modicon) or by direct generation of the Modbus telegrams.

Please keep in mind that the number of register bits to be enquired per telegram should always be divisible by 8.

For enquiry of the switching status, the function codes 01 or 02 can be used on VEGACOM 557 for input and output status.

Note:

When addressing register bits, all addresses between 0 and 65 535 can be used with VEGACOM 557. For accessing the intermediate storage area, VEGACOM 557 uses generally only the last 3 digits of the address.

This means:

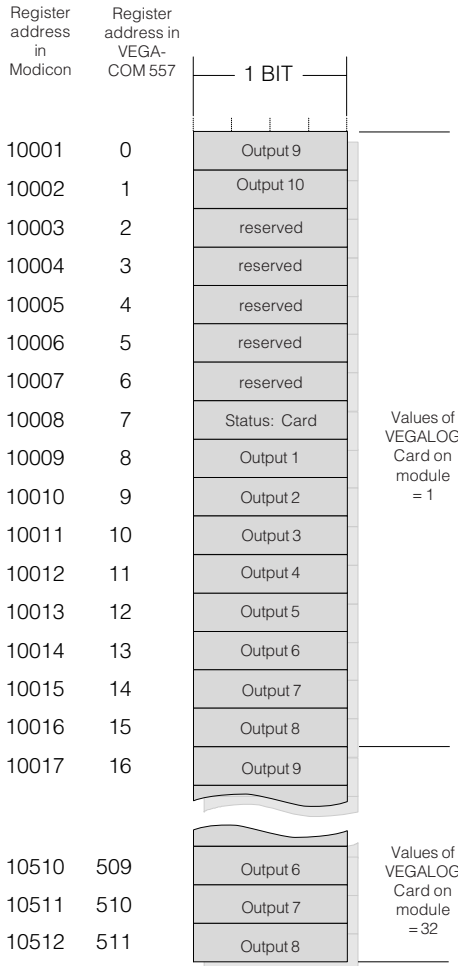
| Register address in Modicon | Register address on Modbus | Register address in VEGACOM 557 |
|-----------------------------|----------------------------|---------------------------------|
| 00 001 | 00 000 | 000 |
| 10 017 | 10 016 | 016 |
| 04 001 | 04 000 | 000 |
| 14 017 | 14 016 | 016 |

Image of switching status in VEGACOM 557 on VEGALOG 571

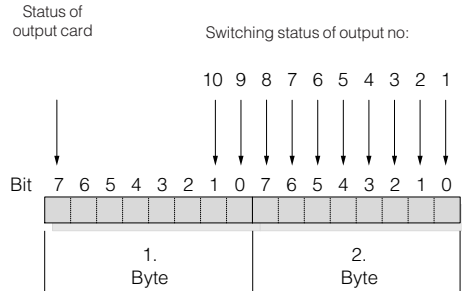


Addressing of the output status when connected to LOGBUS

The image of the output status when connected to VEGALOG is always sorted acc. to the module numbers of the output cards. The following demonstration shows the addressing of the intermediate storage via Modbus.



Imagining the 16 register bits belonging to a module cards as a 16 bit word, the following regulation results.



The meaning of the individual bits is defined as follows:

Status of the output card:

- 0 = OK
- 1 = no values of the output card available (no outputs configured or card not available)

Switching status of the outputs on AR or AT cards:

- 0 = relay deenergised
- 1 = relay energised

Note:

A complete overview of the process image of the switching status of VEGACOM 557 can be found in supplement B at the end of this manual.

Addressing of the switching status in VEGACOM 557 on VEGALOG 571

5 Setup

5.1 Setup check list:

Proceed with the setup of VEGACOM 557 on Modbus as follows:

I. Check hardware requirements:

- Modbus-compatible Master component (Modus: RTU or ASCII)
- Check interface type (RS 232, RS 485, RS 422 or TTY)
- VEGACOM 557 version "Modbus"

II. Carry out adjustments on VEGACOM 557 (DIL switch on additional board):

- Adjust mode for Modbus
- Activate interface type
- Set parameter for interface
- Set Modbus address

III. Make connection to Modbus and check communication:

- In case of correct communication, the green LED marked "BA" lights on VEGACOM 557.

5.2 Communication structure

Within the data communication between VEGACOM 557 and the connected processing system, the following functions are supported:

- Mode (VEGACOM 557 is Slave)
- Instrument address (default value # 1)
- Enquiries:
 - Function 01, Read Coil Status
 - Function 02, Read Input Status
 - Function 04, Read Input Register(s)
- Diagnostics
 - Function 08, Loop back Diagnostic

The RTU mode or the ASCII mode are used as transmission mode.

Thereby any DCS value transmitted by VEGACOM is represented by a register address (= 2 register words = 4 Byte):

- 2 Byte indication value
- 1 Byte unit (is filled with 0)
- 1 Byte status information

VEGACOM 557 does not transfer the decimal point as well as the unit of measurement of the DCS value to the Modbus.

This information must be completed by the user with the software of the process data processing.

Content of the enquiry telegram (Modbus-Master → VEGACOM 557):

- Instrument address VEGACOM on Modbus
- Function code
- Address of the 1. register (Modicon register memory)
- Number of registers
- Checksum (error control)

Content of the answering telegram (VEGACOM 557 → Modbus-Master):

- Instrument address VEGACOM on Modbus
- Function code
- Number of register data bytes
- Register data
- Checksum (error control)

5.3 Format for the transfer of measured values

Measured values and DCS values

The measured values of the VEGA processing systems (VEGAMET or VEGALOG) connected to VEGACOM 557 are reproduced at the input registers of Modicon 584 in the way described in chapter 4.1 and 4.3. They are available in VEGACOM 557 as so called DCS values.

A DCS value covers two register addresses, it consists therefore of 2 double words, i.e. 4 Byte.

A complete overview of the image of the DCS values in the input registers of Modicon and alternative addressing schemes can be found in supplement A of this manual.

Structure of a measured value

Measured values of the VEGALOG or VEGAMET processing systems are transferred to VEGACOM 557 as signed data containing 2 octets. This means that the value range comprises max. +32768 to -32767.

Structure of a DCS value

An individual DCS value in VEGACOM 557 consists of 4 octets and is composed as follows:

DCS value

| Meas. value | | Add. info | |
|-------------|----------|-----------|---------|
| Octet 1 | Octet 2 | Octet 3 | Octet 4 |
| High-Byte | Low-Byte | Unit | Status |

The real meas. value has a length of 2 octets and is signed, this means that the value range is between +32768 and -32767.

In addition to the meas. value, VEGACOM 557 provides one octet per DCS value for information on the measuring unit and another octet for information on the current status of the measured value.

The octet for the unit or measurement presently unused - it is always filled with the value zero.

The status describes the condition of the two respective meas. value octets. The content of the meas. value octet is only valid when the respective status has the value zero.

If there is a status value unequal zero, the status value and the respective value in the measured value field must be taken into account for detailed error diagnostics. The following list explains the possible errors:

| Status | Meas. value | Meaning |
|--------|-------------|---|
| 0x00 | 0xXXXX | valid measured value |
| 0x01 | 0xXXXX | simulated meas. value (only on VEGAMET 509 and 512) |
| 0x80 | 0xXXXX | old meas. value (probably connection separated) |
| 0xFE | 0x0000 | there is no meas. value available (not configured) |
| 0xFF | 0xFFFF | there is no VEGAMET or VEGALOG connected |
| 0xFF | 0x00XX | failure message of an individual meas. loop |
| | | XX = error type |
| 0xFF | 0x8000 | failure message of an individual meas. loop Error type not defined |

5.4 Data transmission with Modbus RTU

Already several years ago, the firm AEG developed a communication technique for its PLC, called Modbus. This specification is used today by several companies for the coupling of IO-components.

For the Modbus, we distinguish between two versions: Modbus RTU and Modbus ASCII. Both have the same data content, but the scale and the coding of the characters are different.

RTU mode

With the RTU coding, the message starts with a break of 3.5 character lapses (start sequence). The character lapse is directly deduced from the baud rate. This is followed by the transmission and can be made with a slip of 1.5 character lapses. The transmission is followed by an end sequence consisting of 3.5 characters. The demonstration of character image comprises the complete range of a byte and is implemented in binary format. This ensures a considerably higher data transfer rate than with the ASCII mode.

Transfer measured values as DCS values in the RTU mode

Independent of the connected VEGA signal conditioning instrument (VEGAMET or VEGALOG), the transmission of the DCS values is made through the Modbus always acc. to the same procedure via the function code 04 "Read Input Registers".

Procedure with Modbus-Master Modicon or Freelance 2000

When using an AEG-Modicon or a Freelance 2000 from Hartmann & Braun as Modbus-Master, these systems take over the communication to the Modbus. In this case, only the respective function enquiry "Read Input Registers" must be programmed in the PLC, and the required parameters such as Slave address, start register and number of register must be stated. The conversion of the measured value addresses in VEGALOG or VEGAMET to the input registers of the PLC is stated in the table in supplement A.

Example for data from VEGAMET 515:

Two DCS values should be collected from VEGAMET #2 (DCS outputs 1 and 2). VEGACOM 557 operates in mode "Sort measured values acc. to VEGAMET addresses". The Slave-address of VEGACOM 557 is set to 1.

Parameter setting for function enquiry "Read Input Registers":

- Slave-address = 1
- Register word address (Start) = 30.029 (or 028 on Freelance 2000)
- Number of register words = 4

Procedure with Modbus-Master-simulation (e.g. PC)

In case the data enquiry should be made via a Modbus-Master-simulation, this can be done, for example, via a self-written communication driver using the "Function code 04 = Read Input Registers". The following demonstration should explain the communication processes between Modbus-Master and VEGACOM 557 on the Modbus.

Example for data from VEGAMET 514:

A DCS value should be collected from VEGAMET #2 (DCS output 1). VEGACOM 557 operates in mode "Sort measured values acc. to VEGAMET addresses". The Slave-address of VEGACOM 557 is set to 1.

Current meas. value on VEGAMET DCS output 1 is: 3.30% (= 0x014A)

Structure of the meas. value enquiry Modbus-Master to VEGACOM 557

| | | | | | | | |
|-----------------|--------------|---------------|---------------|---------------------------------|--------------------------|-------------|--------------|
| Meaning | Start | Slave address | Function code | Address of the 1. register word | Number of register words | Error Check | End |
| Number of Bytes | 3 ... 4 | 1 | 1 | 2 | 2 | 2 | 3 ... 4 |
| Value range | Closed level | 1 ... 247 | 04 | 0 ... 65.509 | 1 ... 127 | CRC | Closed level |



RTU enquiry telegram acc. to measured values (function code 04)

Structure of the answer VEGACOM 557 to Modbus-Master

| | | | | | | | |
|-----------------|--------------|---------------|---------------|-------------------|---------------------------|-------------|--------------|
| Meaning | Start | Slave address | Function code | No. of data bytes | Data (DCS values) | Error Check | End |
| Number of Bytes | 3 ... 4 | 1 | 1 | 1 | 2 bytes per register word | 2 | 3 ... 4 |
| Value range | Closed level | 1 ... 247 | 04 | 2 ... 255 | 0 ... 255 per byte | CRC | Closed level |



DCS value 1 of VEGAMET #2:
 Status: 0x00
 Unit: 0x00
 Meas. value: 0x014A = 3,30%

RTU answering telegram (function code 04)

Transfer switching status to RTU mode

Independent of the connected VEGA signal conditioning instrument (VEGAMET or VEGA-LOG), the transmission of the switching status via Modbus is always made acc. to the same procedure via the function code 01 "Read Coil Status" or optionally via function code 02 "Read Input Status".

Procedure with Modbus-Master Modicon or Freelance 2000

When using an AEG-Modicon or a Freelance 2000 from Hartmann & Braun as Modbus-Master, these systems take over the communication to the Modbus. In this case, only the respective function enquiry "Read Coil Status" or "Read Input Status" must be programmed in the PLC and the required parameters such as Slave address, start register and number of register must be stated. The conversion of the output addresses in VEGALOG or input/output addresses in VEGAMET to the input registers of the PLC is stated in the table in supplement B.

Example for data from VEGAMET 515:

The switching status of VEGAMET #3 (relay outputs 1 and 2 and fail safe relay) should be collected. In addition the status bit for the outputs should be read in to make sure that the data are valid. The Slave-address of VEGACOM 557 is set to 1.

Parameter setting for function enquiry "Read Input Registers":

- Slave-address = 1
- Register bit address (Start) = 10.041 (or 040 on Freelance 2000)
- Number of register bits = 8

Procedure with Modbus-Master-simulation (e.g. PC)

In case the enquiry of the switching status should be made via a Modbus-Master-simulation, this can be done, for example, via a self-written communication driver using the "Function code 01 = Read Coil Status" or "Function code 02 = Read Input Status". The following demonstration should explain the communication processes between Modbus-Master and VEGACOM 557 on the Modbus.

Example for switching status of VEGALOG:

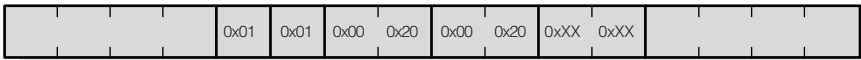
The switching status of the VEGALOG-AR cards should be outputted on module #3 and #4. In addition, the respective status bits for the output cards should be read out to make sure that the data are valid. The Slave-address of VEGACOM 557 is set to 1.

Actual switching conditions on VEGALOG:

| Output: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Status |
|------------|----|----|----|----|-----|-----|-----|-----|-----|-----|--------|
| AR card #3 | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OK |
| AR card #4 | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OK |

Structure of the enquiry acc. to switching status from Modbus-Master to VEGACOM 557

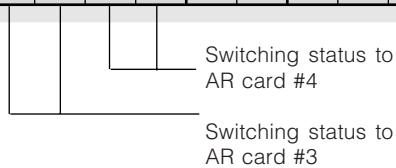
| | | | | | | | |
|-----------------|--------------|---------------|---------------|----------------------------|-------------------------|-------------|--------------|
| Meaning | Start | Slave address | Function code | Address of 1. register bit | Number of register bits | Error Check | End |
| Number of Bytes | 3 ... 4 | 1 | 1 | 2 | 2 | 2 | 3 ... 4 |
| Value range | Closed level | 1 ... 247 | 01 | 0 ... 65.509 | 8 ... 2.040 | CRC | Closed level |



RTU enquiry telegram acc. to switching conditions (function code 01)

Structure of the answer VEGACOM 557 to Modbus-Master

| | | | | | | | |
|--------------|--------------|---------------|---------------|-------------------|----------------------------|-------------|--------------|
| Meaning | Start | Slave address | Function code | No. of data bytes | Data (switching status) | Error Check | End |
| No. of Bytes | 3 ... 4 | 1 | 1 | 1 | 1 byte for 8 register bits | 2 | 3 ... 4 |
| Value range | Closed level | 1 ... 247 | 01 | 255 | 1 ... 127 | CRC | Closed level |



RTU answer telegram (function code 01)

Parameter adjustment of VEGALOG or VEGAMET in RTU mode

VEGACOM 557 also provides the option of enquiring and modifying different parameters of the VEGALOG or VEGAMET signal conditioning instruments (relating to measurement loop). The following list gives an overview of the affected parameters:

| Parameter name | possible access mode | |
|--------------------------------|----------------------|---------|
| Density | reading | writing |
| Relay switching point (top) | reading | writing |
| Relay switching point (bottom) | reading | writing |
| Integration time | reading | writing |
| Scaling (0 %) | reading | writing |
| Scaling (100 %) | reading | writing |
| Current offset | reading | writing |
| Activate offset adjustment | - | writing |

Independent of the connected VEGA signal conditioning instrument (VEGAMET or VEGALOG), the enquiry or modification of parameters is made via the Profibus always according to the same procedure via the function codes 16 (= Preset Multiple Registers) and 04 (Read Input Registers).

With the command "Preset Multiple Registers" the data for the parameter enquiry are transferred to VEGACOM 557. For reading access, 3 register words are necessary and for writing access 4 register words.

After VEGACOM 557 has confirmed the transfer, a cyclical enquiry must be made with a second command "Read Input Registers" (function code 04), to get the information that the processing is finished. VEGACOM 557 signals an Exception Code "Slave Device Busy", (0x06) until either the data has been processed or the processing time has elapsed. As start address are valid, e.g. 30500, 31500 or 32500, etc. for the Modicon or 499, 1499 or 2499, etc. when accessing via your own self-written communication driver.

For further information, please contact one of our employees.

Diagnostic message in RTU mode

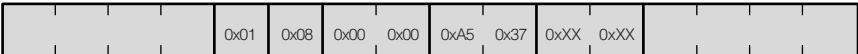
Function code 08 (diagnostics) enables the diagnostics of the Modbus-participants through the Modbus-Master. VEGACOM 557 supports the Diagnostic Code 0x0000 (return of the data). In the field "Diagnostic Data", any approved data can be entered, which are returned unchanged from a functioning VEGACOM 557.

Function 08 is implemented in the same manner for both VEGAMET and VEGALOG.

Example of a diagnostic telegram:

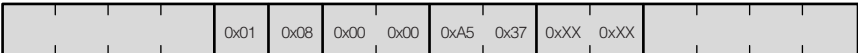
The Modbus participant with the Slave address 1 shall confirm the diagnostic data 0xA5, 0x37.

Structure of the diagnostic function from Modbus master to VEGACOM 557

| | | | | | | | |
|--|--------------|---------------|---------------|-----------------|-----------------|-------------|--------------|
| Meaning | Start | Slave address | Function code | Diagnostic Code | Diagnostic Data | Error Check | End |
| No. of Bytes | 3 ... 4 | 1 | 1 | 2 | 2 | 2 | 3 ... 4 |
| Value range | Closed level | 1 ... 247 | 08 | 0 | 0 ... 65.535 | CRC | Closed level |
|  | | | | | | | |

RTU enquiry telegram diagnostic (function code 08)

Structure of the confirmation from VEGACOM 557 to Modbus-Master

| | | | | | | | |
|--|--------------|---------------|---------------|-----------------|-----------------|-------------|--------------|
| Meaning | Start | Slave address | Function code | Diagnostic Code | Diagnostic Data | Error Check | End |
| No. of Bytes | 3 ... 4 | 1 | 1 | 2 | 2 | 2 | 3 ... 4 |
| Value range | Closed level | 1 ... 247 | 08 | 0 | 0 ... 65.535 | CRC | Closed level |
|  | | | | | | | |

RTU confirmation telegram diagnostic (function code 08)

Error messages in RTU mode

Errors in the telegram of function code 04 (Read Input Register) are commented by an error message (Exception Response). The most significant bit of the function code is set to 1 (corresponds to function code + 80H). In the byte Exception Code, the error is named in coded form (see error overview).

Error overview:

| Exception Code | Meaning |
|----------------|---------------------------------|
| 1 | unpermitted function |
| 2 | unpermitted start register |
| 3 | unpermitted number of registers |

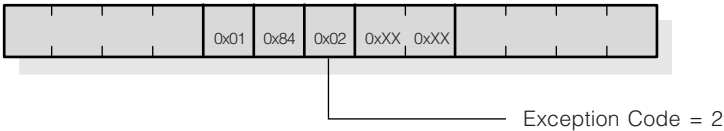
Example for error message:

A DCS value should be collected from a VEGAMET 513. VEGACOM 557 operates in mode "Sort measured values acc. to VEGAMET addresses". The Slave-address of VEGACOM 557 is set to 1.

In the enquiry telegram, 240 was inadvertently enquired as start register. The highest possible register in this case, is 222. Therefore the following answering telegram appears:

Structure of the answer VEGACOM 557 to Modbus-Master

| Meaning | Start | Slave address | Function code | Exception code | Error Check | End |
|--------------|--------------|---------------|---------------|----------------|-------------|--------------|
| No. of Bytes | 3...4 | 1 | 1 | 1 | 2 | 3...4 |
| Value range | Closed level | 1..247 | 0x84 | 1..3 | CRC | Closed level |



RTU answer telegram (function code 04) to faulty enquiry

5.5 Data transmission with Modbus ASCII

Already several years ago, the firm AEG developed a communication technique for its PLC, called Modbus. This specification is used today by several companies for the coupling of IO-components.

For the Modbus we distinguish between two versions: Modbus RTU and Modbus ASCII. Both have the same data content, but the scale and the coding of the characters are different.

ASCII mode

In the ASCII mode the transmission starts with the character ':' and ends with CR LF. For coding, hexadecimal figures '0' to '9' and 'A' to 'F' are available. The coding is made by converting any characteristics hexadecimally. Due to this conversion, twice the number of characters must be transmitted via the interface.

For communication, it is necessary that a Slave participant continuously monitors the bus. If the character ':' is received, a new data frame begins. The addressed Slave is then determined by the next two characters.

Transfer measured values as DCS values in ASCII mode

Independent of the connected VEGA signal conditioning instrument (VEGAMET or VEGA-LOG), the transmission of the DCS values is made via the Modbus always acc. to the same procedure via function code 04 "Read Input Registers".

Procedure with Modbus-Master Modicon or Freelance 2000

When using an AEG-Modicon or a Freelance 2000 from Hartmann & Braun as Modbus-Master, these systems take over the communication to the Modbus. In this case, only the respective function enquiry "Read Input Status" must be programmed in the PLC and the required parameters such as Slave address, start register and number of register must be stated. The conversion of the output addresses in VEGALOG or VEGAMET to the input registers of the PLC are given in the table in supplement A.

Example for data of VEGAMET 515:

Two DCS values of VEGAMET #2 (DCS outputs 1 and 2) should be collected. VEGACOM 557 operates in mode "Sort measured values acc. to VEGAMET addresses". The Slave-address of VEGACOM 557 is set to 1.

Parameter setting for function enquiry "Read Input Registers":

- Slave-address = 1
- Register word address (Start) = 30.029 (or 028 on Freelance 2000)
- Number of register words = 4

Procedure with Modbus-Master-simulation (e.g. PC)

In case the data enquiry should be made via a Modbus-Master-simulation, this can be done, for example, via a self-written communication driver using the "Function code 04 = Read Input Registers". The following demonstration should explain the communication processes between Modbus-Master and VEGACOM 557 on the Modbus.

Example for data from VEGAMET 514:

A DCS value should be collected from VEGAMET #2 (DCS output 1). VEGACOM 557 operates in mode "Sort measured values acc. to VEGAMET addresses". The Slave-address of VEGACOM 557 is set to 1.

Current meas. value on VEGAMET DCS output 1 is: 3.30% (= 0x014A)

Structure of the meas. value enquiry Modbus-Master to VEGACOM 557

| Meaning | Start | Slave address | Function code | Address of 1. register word | No. of register words | Error Check | End |
|-----------------|-------|---------------|---------------|-----------------------------|-----------------------|-------------|-------|
| Number of Bytes | 1 | 2 | 2 | 4 | 4 | 2 | 2 |
| Value range | : | 1..247 | 04 | 0...65,509 | 1... 127 | LRC | CR LF |

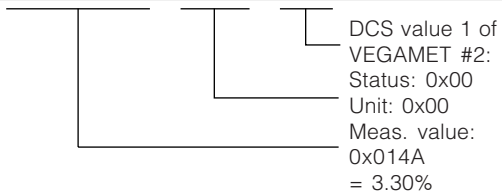
| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| : | 0 | 1 | 0 | 4 | 0 | 0 | 1 | C | 0 | 0 | 0 | 2 | X | X | CR | LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|

ASCII enquiry telegram acc. to measured values (function code 04)

Structure of the answer VEGACOM 557 to Modbus-Master

| Meaning | Start | Slave address | Function code | No. of data bytes | Data (DCS values) | Error Check | End |
|--------------|-------|---------------|---------------|-------------------|-------------------|-------------|-------|
| No. of Bytes | 1 | 2 | 2 | 2 | 8 (per DCS value) | 2 | 2 |
| Value range | : | 1..247 | 04 | 2...254 | | LRC | CR LF |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| : | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 1 | 4 | A | 0 | 0 | 0 | 0 | X | X | CR | LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|



ASCII answer telegram (function code 04)

Transfer switching conditions in ASCII mode

Independent of the connected VEGA signal conditioning instrument (VEGAMET or VEGA-LOG), the transmission of the switching conditions via the Modbus is always made acc. to the same procedure via the function code 01 "Read Coil Status" or optionally via function code 02 "Read Input Status".

Proceeding with Modbus-Master Modicon or Freelance 2000

When using an AEG-Modicon or a Freelance 2000 from Hartmann & Braun as Modbus-Master, these systems take over the communication to the Modbus. In this case, only the respective function enquiry "Read Coil Status" or "Read Input Status" must be programmed in the PLC and the required parameters such as Slave address, start register and number of register must be stated. The conversion of the output addresses in VEGALOG or input/output addresses in VEGAMET to the input registers of the PLC are given in the table in supplement B.

Example for data from VEGAMET 515:

The switching conditions of VEGAMET #3 (relay outputs 1 and 2 and fail safe relay) should be collected. In addition, the status bit for the outputs should be read in to make sure that the data are valid. The slave address of VEGACOM 557 is set to 1.

Parameter setting for function enquiry "Read Input Registers":

- Slave address = 1
- Register bit address (start) = 10.041 (or 040 on Freelance 2000)
- Number of register bits = 8

Procedure with Modbus-Master-simulation (e.g. PC)

In case the data enquiry should be made via a Modbus-Master-simulation, this can be done, for example, via a self-written communication driver using the "Function code 01 = Read Coil Status" or "Function code 02 = Read Input Status". The following diagrams 5.10 to 5.11 should explain the communication processes between Modbus-Master and VEGACOM 557 on the Modbus.

Example for switching conditions of VEGALOG:

The switching conditions of the VEGALOG-AR cards on module #3 and #4 should be read out. In addition, the respective status bits for the output cards should be read out to make sure that the data are valid. The slave address of VEGACOM 557 is set to 1.

Actual switching conditions on VEGALOG are:

| Outp.: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Status |
|------------|----|----|----|----|-----|-----|-----|-----|-----|-----|--------|
| AR card #3 | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OK |
| AR card #4 | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OK |

Structure of enquiry acc. to switching conditions from Modbus master to VEGACOM 557

| Meaning | Start | Slave address | Functions code | Address of the 1. register bit | Number of register bits | Error Check | End |
|--------------|-------|---------------|----------------|--------------------------------|-------------------------|-------------|------|
| No. of bytes | 1 | 2 | 2 | 4 | 4 | 2 | 2 |
| Value range | : | 1..247 | 01 | 0...65.509 | 8...2.040 | LRC | CRLF |

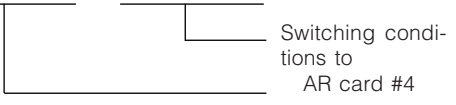
| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| : | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | X | X | CR | LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|

ASCII enquiry telegram acc. to switching conditions (function code 01)

Structure of the answer VEGACOM 557 to Modbus master

| Meaning | Start | Slave address | Function code | No. of data bytes | Data (switching conditions) | Error Check | End |
|--------------|-------|---------------|---------------|-------------------|----------------------------------|-------------|------|
| No. of bytes | 1 | 2 | 2 | 2 | 2 bytes each for 8 register bits | 2 | 2 |
| Value range | : | 1..247 | 01 | 1...255 | | LRC | CRLF |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| : | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | F | 0 | 0 | 0 | F | X | X | CR | LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|



Switching conditions to AR card #4

Switching conditions to AR card #3

SCII answer telegram (function code 01)

Parameter setting of VEGALOG or VEGAMET in ASCII mode

VEGACOM 557 also provides the option of enquiring and modifying different parameters of the VEGALOG or VEGAMET signal conditioning instruments (relating to measurement loop). The following list gives an overview of the affected parameters:

| Parameter name | possible access mode | |
|--------------------------------|----------------------|---------|
| Density | reading | writing |
| Relay switching point (top) | reading | writing |
| Relay switching point (bottom) | reading | writing |
| Integration time | reading | writing |
| Scaling (0 %) | reading | writing |
| Scaling (100 %) | reading | writing |
| Current offset | reading | writing |
| Activate offset adjustment | – | writing |

Independent of the connected VEGA signal conditioning instrument (VEGAMET or VEGALOG), the enquiry or modification of parameters is made via the Profibus always according to the same procedure via the function codes 16 (= Preset Multiple Registers) and 04 (Read Input Registers).

With the command "Preset Multiple Registers", the data for the parameter enquiry are transferred to VEGACOM 557. For reading access, 3 register words are necessary and for writing access 4 register words.

After VEGACOM 557 has confirmed the transfer, a cyclical enquiry must be made with a second command "Read Input Registers" (function code 04), to get the information that the processing is finished. VEGACOM 557 signals an Exception Code "Slave Device Busy", (0x06) until either the data has been processed or the processing time has elapsed. As start address are valid, e.g. 30500, 31500 or 32500, etc. for the Modicon or 499, 1499 or 2499, etc. when accessing via a self-written communication driver.

For further information, please contact one of our employees.

Diagnostic message in ASCII mode

Function code 08 (diagnostics) enables diagnostics of the Modbus-participants through the Modbus-Master. VEGACOM 557 supports the Diagnostic Code 0x0000 (return of the data). In the field "Diagnostic Data" any, approved data can be entered, which are returned unchanged from a functioning VEGACOM 557.

Function 08 is implemented in the same manner for both VEGAMET and VEGALOG.

Example of a diagnostic telegram:

The Modbus participant with the Slave address 1 shall confirm the diagnostic data 0xA5, 0x37.

Structure of the diagnostic function from Modbus master to VEGACOM 557

| | | | | | | | |
|--------------|-------|---------------|---------------|-----------------|-----------------|-------------|-------|
| Meaning | Start | Slave address | Function code | Diagnostic Code | Diagnostic Data | Error Check | End |
| No. of bytes | 1 | 2 | 2 | 4 | 4 | 2 | 2 |
| Value range | : | 1 .. 247 | 08 | 0 | 0 ... 65.535 | LRC | CR LF |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| : | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | A | 5 | 3 | 7 | X | X | CR | LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|

ASCII enquiry telegram diagnostic (function code 08)

Structure of the confirmation from VEGACOM 557 to Modbus master

| | | | | | | | |
|--------------|-------|---------------|---------------|-----------------|-----------------|-------------|-------|
| Meaning | Start | Slave address | Function code | Diagnostic Code | Diagnostic Data | Error Check | End |
| No. of bytes | 1 | 2 | 2 | 4 | 4 | 2 | 2 |
| Value range | : | 1 .. 247 | 08 | 0 | 0 ... 65.535 | LRC | CR LF |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|
| : | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | A | 5 | 3 | 7 | X | X | CR | LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|

ASCII confirmation telegram diagnostic (function code 08)

Error messages in ASCII mode

Errors in the telegram of function code 04 (Read Input Register) are commented by an error message (Exception Response). The most significant bit of the function code is set to 1 (corresponds to function code + 80H). In the byte Exception Code, the error is named in coded form (see error overview).

Error overview:

| Exception Code | Meaning |
|----------------|---------------------------------|
| 1 | unpermitted function |
| 2 | unpermitted start register |
| 3 | unpermitted number of registers |

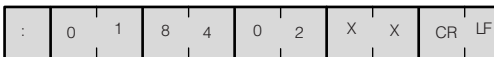
Example for error message:

A DCS value should be collected from a VEGAMET 513. VEGACOM 557 operates in mode "Sort measured values acc. to VEGAMET addresses". The Slave-address of VEGACOM 557 is set to 1.

In the enquiry telegram, 240 was inadvertently enquired as start register. The highest possible register in this case, is 222. Therefore the following answering telegram appears:

Structure of the answer VEGACOM 557 to Modbus master

| Meaning | Start | Slave address | Function code | Exception-code | Error Check | End |
|--------------|-------|---------------|---------------|----------------|-------------|-------|
| No. of bytes | 1 | 2 | 2 | 2 | 2 | 2 |
| Value range | : | 1..247 | 0x84 | 1..3 | LRC | CR LF |



Exception code = 2

ASCII answer telegram (function code 04)

Supplement A Complete overview of the process image of measured values in VEGACOM 557:

| Register word address in Modicon | Register word address im VEGACOM | VEGALOG | Sorting acc. to VEGAMET addresses | | Sorting acc. to channels / DCS indices | |
|--|--|---------|--------------------------------------|------------------------------|---|------------------------------|
| | | | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 |
| | | | | | | |
| 30.001 | 0 | DCS 1 | - | - | - | - |
| 30.003 | 2 | DCS 2 | - | - | CH1 MET1 | DCS1 MET1 |
| 30.005 | 4 | DCS 3 | - | - | CH1 MET2 | DCS1 MET2 |
| 30.007 | 6 | DCS 4 | MET1 CH1 | - | CH1 MET3 | DCS1 MET3 |
| 30.009 | 8 | DCS 5 | MET1 CH2 | - | CH1 MET4 | DCS1 MET4 |
| 30.011 | 10 | DCS 6 | MET1 CH3 | - | CH1 MET5 | DCS1 MET5 |
| 30.013 | 12 | DCS 7 | MET2 CH1 | - | CH1 MET6 | DCS1 MET6 |
| 30.015 | 14 | DCS 8 | MET2 CH2 | MET1 DCS1 | CH1 MET7 | DCS1 MET7 |
| 30.017 | 16 | DCS 9 | MET2 CH3 | MET1 DCS2 | CH1 MET8 | DCS1 MET8 |
| 30.019 | 18 | DCS 10 | MET3 CH1 | MET1 DCS3 | CH1 MET9 | DCS1 MET9 |
| 30.021 | 20 | DCS 11 | MET3 CH2 | MET1 DCS4 | CH1 MET10 | DCS1 MET10 |
| 30.023 | 22 | DCS 12 | MET3 CH3 | MET1 DCS5 | CH1 MET11 | DCS1 MET11 |
| 30.025 | 24 | DCS 13 | MET4 CH1 | MET1 DCS6 | CH1 MET12 | DCS1 MET12 |
| 30.027 | 26 | DCS 14 | MET4 CH2 | MET1 DCS7 | CH1 MET13 | DCS1 MET13 |
| 30.029 | 28 | DCS 15 | MET4 CH3 | MET2 DCS1 | CH1 MET14 | DCS1 MET14 |
| 30.031 | 30 | DCS 16 | MET5 CH1 | MET2 DCS2 | CH1 MET15 | DCS1 MET15 |
| 30.033 | 32 | DCS 17 | MET5 CH2 | MET2 DCS3 | CH2 MET1 | - |
| 30.035 | 34 | DCS 18 | MET5 CH3 | MET2 DCS4 | CH2 MET2 | DCS2 MET1 |
| 30.037 | 36 | DCS 19 | MET6 CH1 | MET2 DCS5 | CH2 MET3 | DCS2 MET2 |
| 30.039 | 38 | DCS 20 | MET6 CH2 | MET2 DCS6 | CH2 MET4 | DCS2 MET3 |
| 30.041 | 40 | DCS 21 | MET6 CH3 | MET2 DCS7 | CH2 MET5 | DCS2 MET4 |
| 30.043 | 42 | DCS 22 | MET7 CH1 | MET3 DCS1 | CH2 MET6 | DCS2 MET5 |
| 30.045 | 44 | DCS 23 | MET7 CH2 | MET3 DCS2 | CH2 MET7 | DCS2 MET6 |
| 30.047 | 46 | DCS 24 | MET7 CH3 | MET3 DCS3 | CH2 MET8 | DCS2 MET7 |
| 30.049 | 48 | DCS 25 | MET8 CH1 | MET3 DCS4 | CH2 MET9 | DCS2 MET8 |
| 30.051 | 50 | DCS 26 | MET8 CH2 | MET3 DCS5 | CH2 MET10 | DCS2 MET9 |
| 30.053 | 52 | DCS 27 | MET8 CH3 | MET3 DCS6 | CH2 MET11 | DCS2 MET10 |
| 30.055 | 54 | DCS 28 | MET9 CH1 | MET3 DCS7 | CH2 MET12 | DCS2 MET11 |
| 30.057 | 56 | DCS 29 | MET9 CH2 | MET4 DCS1 | CH2 MET13 | DCS2 MET12 |
| 30.059 | 58 | DCS 30 | MET9 CH3 | MET4 DCS2 | CH2 MET14 | DCS2 MET13 |
| 30.061 | 60 | DCS 31 | MET10 CH1 | MET4 DCS3 | CH2 MET15 | DCS2 MET14 |
| 30.063 | 62 | DCS 32 | MET10 CH2 | MET4 DCS4 | CH3 MET1 | DCS2 MET15 |
| 30.065 | 64 | DCS 33 | MET10 CH3 | MET4 DCS5 | CH3 MET2 | - |
| 30.067 | 66 | DCS 34 | MET11 CH1 | MET4 DCS6 | CH3 MET3 | DCS3 MET1 |
| 30.069 | 68 | DCS 35 | MET11 CH2 | MET4 DCS7 | CH3 MET4 | DCS3 MET2 |
| 30.071 | 70 | DCS 36 | MET11 CH3 | MET5 DCS1 | CH3 MET5 | DCS3 MET3 |
| 30.073 | 72 | DCS 37 | MET12 CH1 | MET5 DCS2 | CH3 MET6 | DCS3 MET4 |
| 30.075 | 74 | DCS 38 | MET12 CH2 | MET5 DCS3 | CH3 MET7 | DCS3 MET5 |
| 30.077 | 76 | DCS 39 | MET12 CH3 | MET5 DCS4 | CH3 MET8 | DCS3 MET6 |
| 30.079 | 78 | DCS 40 | MET13 CH1 | MET5 DCS5 | CH3 MET9 | DCS3 MET7 |
| 30.081 | 80 | DCS 41 | MET13 CH2 | MET5 DCS6 | CH3 MET10 | DCS3 MET8 |
| 30.083 | 82 | DCS 42 | MET13 CH3 | MET5 DCS7 | CH3 MET11 | DCS3 MET9 |
| 30.085 | 84 | DCS 43 | MET14 CH1 | MET6 DCS1 | CH3 MET12 | DCS3 MET10 |
| 30.087 | 86 | DCS 44 | MET14 CH2 | MET6 DCS2 | CH3 MET13 | DCS3 MET11 |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | Sorting acc. to VEGAMET addresses | | Sorting acc. to channels / DCS indices | |
|-------------------------------------|-------------------------------------|---------|-----------------------------------|---------------------------|--|---------------------------|
| | | | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 |
| 30.089 | 88 | DCS 45 | MET14 CH3 | MET6 DCS3 | CH3 MET14 | DCS3 MET12 |
| 30.091 | 90 | DCS 46 | MET15 CH1 | MET6 DCS4 | CH3 MET15 | DCS3 MET13 |
| 30.093 | 92 | DCS 47 | MET15 CH2 | MET6 DCS5 | - | DCS3 MET14 |
| 30.095 | 94 | DCS 48 | MET15 CH3 | MET6 DCS6 | - | DCS3 MET15 |
| 30.097 | 96 | DCS 49 | - | MET6 DCS7 | - | - |
| 30.099 | 98 | DCS 50 | - | MET7 DCS1 | - | DCS4 MET1 |
| 30.101 | 100 | DCS 51 | - | MET7 DCS2 | - | DCS4 MET2 |
| 30.103 | 102 | DCS 52 | - | MET7 DCS3 | - | DCS4 MET3 |
| 30.105 | 104 | DCS 53 | - | MET7 DCS4 | - | DCS4 MET4 |
| 30.107 | 106 | DCS 54 | - | MET7 DCS5 | - | DCS4 MET5 |
| 30.109 | 108 | DCS 55 | - | MET7 DCS6 | - | DCS4 MET6 |
| 30.111 | 110 | DCS 56 | - | MET7 DCS7 | - | DCS4 MET7 |
| 30.113 | 112 | DCS 57 | - | MET8 DCS1 | - | DCS4 MET8 |
| 30.115 | 114 | DCS 58 | - | MET8 DCS2 | - | DCS4 MET9 |
| 30.117 | 116 | DCS 59 | - | MET8 DCS3 | - | DCS4 MET10 |
| 30.119 | 118 | DCS 60 | - | MET8 DCS4 | - | DCS4 MET11 |
| 30.121 | 120 | DCS 61 | - | MET8 DCS5 | - | DCS4 MET12 |
| 30.123 | 122 | DCS 62 | - | MET8 DCS6 | - | DCS4 MET13 |
| 30.125 | 124 | DCS 63 | - | MET8 DCS7 | - | DCS4 MET14 |
| 30.127 | 126 | DCS 64 | - | MET9 DCS1 | - | DCS4 MET15 |
| 30.129 | 128 | DCS 65 | - | MET9 DCS2 | - | - |
| 30.131 | 130 | DCS 66 | - | MET9 DCS3 | - | DCS5 MET1 |
| 30.133 | 132 | DCS 67 | - | MET9 DCS4 | - | DCS5 MET2 |
| 30.135 | 134 | DCS 68 | - | MET9 DCS5 | - | DCS5 MET3 |
| 30.137 | 136 | DCS 69 | - | MET9 DCS6 | - | DCS5 MET4 |
| 30.139 | 138 | DCS 70 | - | MET9 DCS7 | - | DCS5 MET5 |
| 30.141 | 140 | DCS 71 | - | MET10 DCS1 | - | DCS5 MET6 |
| 30.143 | 142 | DCS 72 | - | MET10 DCS2 | - | DCS5 MET7 |
| 30.145 | 144 | DCS 73 | - | MET10 DCS3 | - | DCS5 MET8 |
| 30.147 | 146 | DCS 74 | - | MET10 DCS4 | - | DCS5 MET9 |
| 30.149 | 148 | DCS 75 | - | MET10 DCS5 | - | DCS5 MET10 |
| 30.151 | 150 | DCS 76 | - | MET10 DCS6 | - | DCS5 MET11 |
| 30.153 | 152 | DCS 77 | - | MET10 DCS7 | - | DCS5 MET12 |
| 30.155 | 154 | DCS 78 | - | MET11 DCS1 | - | DCS5 MET13 |
| 30.157 | 156 | DCS 79 | - | MET11 DCS2 | - | DCS5 MET14 |
| 30.159 | 158 | DCS 80 | - | MET11 DCS3 | - | DCS5 MET15 |
| 30.161 | 160 | DCS 81 | - | MET11 DCS4 | - | - |
| 30.163 | 162 | DCS 82 | - | MET11 DCS5 | - | DCS6 MET1 |
| 30.165 | 164 | DCS 83 | - | MET11 DCS6 | - | DCS6 MET2 |
| 30.167 | 166 | DCS 84 | - | MET11 DCS7 | - | DCS6 MET3 |
| 30.169 | 168 | DCS 85 | - | MET12 DCS1 | - | DCS6 MET4 |
| 30.171 | 170 | DCS 86 | - | MET12 DCS2 | - | DCS6 MET5 |
| 30.173 | 172 | DCS 87 | - | MET12 DCS3 | - | DCS6 MET6 |
| 30.175 | 174 | DCS 88 | - | MET12 DCS4 | - | DCS6 MET7 |
| 30.177 | 176 | DCS 89 | - | MET12 DCS5 | - | DCS6 MET8 |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | Sorting acc. to VEGAMET addresses | | Sorting acc. to channels / DCS indices | |
|-------------------------------------|-------------------------------------|---------|--------------------------------------|-------------------------------|---|------------------------------|
| | | | VEGAMET 509, 512 | VEGAMET 513, 514, 515, 614 | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 |
| 30.179 | 178 | DCS 90 | - | MET12 DCS6 | - | DCS6 MET9 |
| 30.181 | 180 | DCS 91 | - | MET12 DCS7 | - | DCS6 MET10 |
| 30.183 | 182 | DCS 92 | - | MET13 DCS1 | - | DCS6 MET11 |
| 30.185 | 184 | DCS 93 | - | MET13 DCS2 | - | DCS6 MET12 |
| 30.187 | 186 | DCS 94 | - | MET13 DCS3 | - | DCS6 MET13 |
| 30.189 | 188 | DCS 95 | - | MET13 DCS4 | - | DCS6 MET14 |
| 30.191 | 190 | DCS 96 | - | MET13 DCS5 | - | DCS6 MET15 |
| 30.193 | 192 | DCS 97 | - | MET13 DCS6 | - | - |
| 30.195 | 194 | DCS 98 | - | MET13 DCS7 | - | DCS7 MET1 |
| 30.197 | 196 | DCS 99 | - | MET14 DCS1 | - | DCS7 MET2 |
| 30.199 | 198 | DCS 100 | - | MET14 DCS2 | - | DCS7 MET3 |
| 30.201 | 200 | DCS 101 | - | MET14 DCS3 | - | DCS7 MET4 |
| 30.203 | 202 | DCS 102 | - | MET14 DCS4 | - | DCS7 MET5 |
| 30.205 | 204 | DCS 103 | - | MET14 DCS5 | - | DCS7 MET6 |
| 30.207 | 206 | DCS 104 | - | MET14 DCS6 | - | DCS7 MET7 |
| 30.209 | 208 | DCS 105 | - | MET14 DCS7 | - | DCS7 MET8 |
| 30.211 | 210 | DCS 106 | - | MET15 DCS1 | - | DCS7 MET9 |
| 30.213 | 212 | DCS 107 | - | MET15 DCS2 | - | DCS7 MET10 |
| 30.215 | 214 | DCS 108 | - | MET15 DCS3 | - | DCS7 MET11 |
| 30.217 | 216 | DCS 109 | - | MET15 DCS4 | - | DCS7 MET12 |
| 30.219 | 218 | DCS 110 | - | MET15 DCS5 | - | DCS7 MET13 |
| 30.221 | 220 | DCS 111 | - | MET15 DCS6 | - | DCS7 MET14 |
| 30.223 | 222 | DCS 112 | - | MET15 DCS7 | - | DCS7 MET15 |
| 30.225 | 224 | DCS 113 | - | - | - | - |
| 30.227 | 226 | DCS 114 | - | - | - | - |
| 30.229 | 228 | DCS 115 | - | - | - | - |
| 30.231 | 230 | DCS 116 | - | - | - | - |
| 30.233 | 232 | DCS 117 | - | - | - | - |
| 30.235 | 234 | DCS 118 | - | - | - | - |
| 30.237 | 236 | DCS 119 | - | - | - | - |
| 30.239 | 238 | DCS 120 | - | - | - | - |
| 30.241 | 240 | DCS 121 | - | - | - | - |
| 30.243 | 242 | DCS 122 | - | - | - | - |
| 30.245 | 244 | DCS 123 | - | - | - | - |
| 30.247 | 246 | DCS 124 | - | - | - | - |
| 30.249 | 248 | DCS 125 | - | - | - | - |
| 30.251 | 250 | DCS 126 | - | - | - | - |
| 30.253 | 252 | DCS 127 | - | - | - | - |
| 30.255 | 254 | DCS 128 | - | - | - | - |
| 30.257 | 256 | DCS 129 | - | - | - | - |
| 30.259 | 258 | DCS 130 | - | - | - | - |
| 30.261 | 260 | DCS 131 | - | - | - | - |
| 30.263 | 262 | DCS 132 | - | - | - | - |
| 30.265 | 264 | DCS 133 | - | - | - | - |
| 30.267 | 266 | DCS 134 | - | - | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | Sorting acc. to VEGAMET addresses | | Sorting acc. to channels / DCS indices | |
|--|--|---------|--------------------------------------|------------------------------|---|------------------------------|
| | | | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 |
| 30.269 | 268 | DCS 135 | - | - | - | - |
| 30.271 | 270 | DCS 136 | - | - | - | - |
| 30.273 | 272 | DCS 137 | - | - | - | - |
| 30.275 | 274 | DCS 138 | - | - | - | - |
| 30.277 | 276 | DCS 139 | - | - | - | - |
| 30.279 | 278 | DCS 140 | - | - | - | - |
| 30.281 | 280 | DCS 141 | - | - | - | - |
| 30.283 | 282 | DCS 142 | - | - | - | - |
| 30.285 | 284 | DCS 143 | - | - | - | - |
| 30.287 | 286 | DCS 144 | - | - | - | - |
| 30.289 | 288 | DCS 145 | - | - | - | - |
| 30.291 | 290 | DCS 146 | - | - | - | - |
| 30.293 | 292 | DCS 147 | - | - | - | - |
| 30.295 | 294 | DCS 148 | - | - | - | - |
| 30.297 | 296 | DCS 149 | - | - | - | - |
| 30.299 | 298 | DCS 150 | - | - | - | - |
| 30.301 | 300 | DCS 151 | - | - | - | - |
| 30.303 | 302 | DCS 152 | - | - | - | - |
| 30.305 | 304 | DCS 153 | - | - | - | - |
| 30.307 | 306 | DCS 154 | - | - | - | - |
| 30.309 | 308 | DCS 155 | - | - | - | - |
| 30.311 | 310 | DCS 156 | - | - | - | - |
| 30.313 | 312 | DCS 157 | - | - | - | - |
| 30.315 | 314 | DCS 158 | - | - | - | - |
| 30.317 | 316 | DCS 159 | - | - | - | - |
| 30.319 | 318 | DCS 160 | - | - | - | - |
| 30.321 | 320 | DCS 161 | - | - | - | - |
| 30.323 | 322 | DCS 162 | - | - | - | - |
| 30.325 | 324 | DCS 163 | - | - | - | - |
| 30.327 | 326 | DCS 164 | - | - | - | - |
| 30.329 | 328 | DCS 165 | - | - | - | - |
| 30.331 | 330 | DCS 166 | - | - | - | - |
| 30.333 | 332 | DCS 167 | - | - | - | - |
| 30.335 | 334 | DCS 168 | - | - | - | - |
| 30.337 | 336 | DCS 169 | - | - | - | - |
| 30.339 | 338 | DCS 170 | - | - | - | - |
| 30.341 | 340 | DCS 171 | - | - | - | - |
| 30.343 | 342 | DCS 172 | - | - | - | - |
| 30.345 | 344 | DCS 173 | - | - | - | - |
| 30.347 | 346 | DCS 174 | - | - | - | - |
| 30.349 | 348 | DCS 175 | - | - | - | - |
| 30.351 | 350 | DCS 176 | - | - | - | - |
| 30.353 | 352 | DCS 177 | - | - | - | - |
| 30.355 | 354 | DCS 178 | - | - | - | - |
| 30.357 | 356 | DCS 179 | - | - | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | Sorting acc. to VEGAMET addresses | | Sorting acc. to channels / DCS indices | |
|--|--|---------|--------------------------------------|-------------------------------|---|------------------------------|
| | | | VEGAMET 509, 512 | VEGAMET 513, 514, 515, 614 | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 |
| | | | | | | |
| 30.359 | 358 | DCS 180 | - | - | - | - |
| 30.361 | 360 | DCS 181 | - | - | - | - |
| 30.363 | 362 | DCS 182 | - | - | - | - |
| 30.365 | 364 | DCS 183 | - | - | - | - |
| 30.367 | 366 | DCS 184 | - | - | - | - |
| 30.369 | 368 | DCS 185 | - | - | - | - |
| 30.371 | 370 | DCS 186 | - | - | - | - |
| 30.373 | 372 | DCS 187 | - | - | - | - |
| 30.375 | 374 | DCS 188 | - | - | - | - |
| 30.377 | 376 | DCS 189 | - | - | - | - |
| 30.379 | 378 | DCS 190 | - | - | - | - |
| 30.381 | 380 | DCS 191 | - | - | - | - |
| 30.383 | 382 | DCS 192 | - | - | - | - |
| 30.385 | 384 | DCS 193 | - | - | - | - |
| 30.387 | 386 | DCS 194 | - | - | - | - |
| 30.389 | 388 | DCS 195 | - | - | - | - |
| 30.391 | 390 | DCS 196 | - | - | - | - |
| 30.393 | 392 | DCS 197 | - | - | - | - |
| 30.395 | 394 | DCS 198 | - | - | - | - |
| 30.397 | 396 | DCS 199 | - | - | - | - |
| 30.399 | 398 | DCS 200 | - | - | - | - |
| 30.401 | 400 | DCS 201 | - | - | - | - |
| 30.403 | 402 | DCS 202 | - | - | - | - |
| 30.405 | 404 | DCS 203 | - | - | - | - |
| 30.407 | 406 | DCS 204 | - | - | - | - |
| 30.409 | 408 | DCS 205 | - | - | - | - |
| 30.411 | 410 | DCS 206 | - | - | - | - |
| 30.413 | 412 | DCS 207 | - | - | - | - |
| 30.415 | 414 | DCS 208 | - | - | - | - |
| 30.417 | 416 | DCS 209 | - | - | - | - |
| 30.419 | 418 | DCS 210 | - | - | - | - |
| 30.421 | 420 | DCS 211 | - | - | - | - |
| 30.423 | 422 | DCS 212 | - | - | - | - |
| 30.425 | 424 | DCS 213 | - | - | - | - |
| 30.427 | 426 | DCS 214 | - | - | - | - |
| 30.429 | 428 | DCS 215 | - | - | - | - |
| 30.431 | 430 | DCS 216 | - | - | - | - |
| 30.433 | 432 | DCS 217 | - | - | - | - |
| 30.435 | 434 | DCS 218 | - | - | - | - |
| 30.437 | 436 | DCS 219 | - | - | - | - |
| 30.439 | 438 | DCS 220 | - | - | - | - |
| 30.441 | 440 | DCS 221 | - | - | - | - |
| 30.443 | 442 | DCS 222 | - | - | - | - |
| 30.445 | 444 | DCS 223 | - | - | - | - |
| 30.447 | 446 | DCS 224 | - | - | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | Sorting acc. to VEGAMET addresses | | Sorting acc. to channels / DCS indices | |
|---|---|---------|-----------------------------------|---------------------------|--|---------------------------|
| | | | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 | VEGAMET 509, 512 | VEGAMET 513 514, 515, 614 |
| 30.449 | 448 | DCS 225 | - | - | - | - |
| 30.451 | 450 | DCS 226 | - | - | - | - |
| 30.453 | 452 | DCS 227 | - | - | - | - |
| 30.455 | 454 | DCS 228 | - | - | - | - |
| 30.457 | 456 | DCS 229 | - | - | - | - |
| 30.459 | 458 | DCS 230 | - | - | - | - |
| 30.461 | 460 | DCS 231 | - | - | - | - |
| 30.463 | 462 | DCS 232 | - | - | - | - |
| 30.465 | 464 | DCS 233 | - | - | - | - |
| 30.467 | 466 | DCS 234 | - | - | - | - |
| 30.469 | 468 | DCS 235 | - | - | - | - |
| 30.471 | 470 | DCS 236 | - | - | - | - |
| 30.473 | 472 | DCS 237 | - | - | - | - |
| 30.475 | 474 | DCS 238 | - | - | - | - |
| 30.477 | 476 | DCS 239 | - | - | - | - |
| 30.479 | 478 | DCS 240 | - | - | - | - |
| 30.481 | 480 | DCS 241 | - | - | - | - |
| 30.483 | 482 | DCS 242 | - | - | - | - |
| 30.485 | 484 | DCS 243 | - | - | - | - |
| 30.487 | 486 | DCS 244 | - | - | - | - |
| 30.489 | 488 | DCS 245 | - | - | - | - |
| 30.491 | 490 | DCS 246 | - | - | - | - |
| 30.493 | 492 | DCS 247 | - | - | - | - |
| 30.495 | 494 | DCS 248 | - | - | - | - |
| 30.497 | 496 | DCS 249 | - | - | - | - |
| 30.499 | 498 | DCS 250 | - | - | - | - |
| 30.501 | 500 | DCS 251 | - | - | - | - |
| 30.503 | 502 | DCS 252 | - | - | - | - |
| 30.505 | 504 | DCS 253 | - | - | - | - |
| 30.507 | 506 | DCS 254 | - | - | - | - |
| 30.509 | 508 | DCS 255 | - | - | - | - |

Supplement B

Complete overview of the process image of the switching status in VEGACOM 557:

| Register bit address in Modicon | Register bit address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|---------------------------------------|---------------------------------------|------------|-------------------|-------------------------------|-------------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Sw itching status |
| 10.001 | 0 | #1 | Output contact 9 | VEGAMET #1 | Input contact 2 |
| 10.002 | 1 | #1 | Output contact 10 | VEGAMET #1 | Input contact 1 |
| 10.003 | 2 | #1 | - | VEGAMET #1 | - |
| 10.004 | 3 | #1 | - | VEGAMET #1 | - |
| 10.005 | 4 | #1 | - | VEGAMET #1 | - |
| 10.006 | 5 | #1 | - | VEGAMET #1 | - |
| 10.007 | 6 | #1 | - | VEGAMET #1 | - |
| 10.008 | 7 | #1 | Status: Card | VEGAMET #1 | Status of inputs |
| 10.009 | 8 | #1 | Output contact 1 | VEGAMET #1 | Relay contact 1 |
| 10.010 | 9 | #1 | Output contact 2 | VEGAMET #1 | Relay contact 2 |
| 10.011 | 10 | #1 | Output contact 3 | VEGAMET #1 | Fail safe relay |
| 10.012 | 11 | #1 | Output contact 4 | VEGAMET #1 | - |
| 10.013 | 12 | #1 | Output contact 5 | VEGAMET #1 | - |
| 10.014 | 13 | #1 | Output contact 6 | VEGAMET #1 | - |
| 10.015 | 14 | #1 | Output contact 7 | VEGAMET #1 | - |
| 10.016 | 15 | #1 | Output contact 8 | VEGAMET #1 | Status of outputs |
| 10.017 | 16 | #2 | Output contact 9 | VEGAMET #2 | Input contact 2 |
| 10.018 | 17 | #2 | Output contact 10 | VEGAMET #2 | Input contact 1 |
| 10.019 | 18 | #2 | - | VEGAMET #2 | - |
| 10.020 | 19 | #2 | - | VEGAMET #2 | - |
| 10.021 | 20 | #2 | - | VEGAMET #2 | - |
| 10.022 | 21 | #2 | - | VEGAMET #2 | - |
| 10.023 | 22 | #2 | - | VEGAMET #2 | - |
| 10.024 | 23 | #2 | Status: Card | VEGAMET #2 | Status of inputs |
| 10.025 | 24 | #2 | Output contact 1 | VEGAMET #2 | Relay contact 1 |
| 10.026 | 25 | #2 | Output contact 2 | VEGAMET #2 | Relay contact 2 |
| 10.027 | 26 | #2 | Output contact 3 | VEGAMET #2 | Fail safe relay |
| 10.028 | 27 | #2 | Output contact 4 | VEGAMET #2 | - |
| 10.029 | 28 | #2 | Output contact 5 | VEGAMET #2 | - |
| 10.030 | 29 | #2 | Output contact 6 | VEGAMET #2 | - |
| 10.031 | 30 | #2 | Output contact 7 | VEGAMET #2 | - |
| 10.032 | 31 | #2 | Output contact 8 | VEGAMET #2 | Status of outputs |
| 10.033 | 32 | #3 | Output contact 9 | VEGAMET #3 | Input contact 2 |
| 10.034 | 33 | #3 | Output contact 10 | VEGAMET #3 | Input contact 1 |
| 10.035 | 34 | #3 | - | VEGAMET #3 | - |
| 10.036 | 35 | #3 | - | VEGAMET #3 | - |
| 10.037 | 36 | #3 | - | VEGAMET #3 | - |
| 10.038 | 37 | #3 | - | VEGAMET #3 | - |
| 10.039 | 38 | #3 | - | VEGAMET #3 | - |
| 10.040 | 39 | #3 | Status: Card | VEGAMET #3 | Status of inputs |
| 10.041 | 40 | #3 | Output contact 1 | VEGAMET #3 | Relay contact 1 |
| 10.042 | 41 | #3 | Output contact 2 | VEGAMET #3 | Relay contact 2 |
| 10.043 | 42 | #3 | Output contact 3 | VEGAMET #3 | Fail safe relay |
| 10.044 | 43 | #3 | Output contact 4 | VEGAMET #3 | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|-------------------------------------|-------------------------------------|------------|-------------------|-------------------------------|----------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Sw itching status |
| 10.045 | 44 | #3 | Output contact 5 | VEGAMET #3 | - |
| 10.046 | 45 | #3 | Output contact 6 | VEGAMET #3 | - |
| 10.047 | 46 | #3 | Output contact 7 | VEGAMET #3 | - |
| 10.048 | 47 | #3 | Output contact 8 | VEGAMET #3 | Status of outputs |
| 10.049 | 48 | #4 | Output contact 9 | VEGAMET #4 | Input contact 2 |
| 10.050 | 49 | #4 | Output contact 10 | VEGAMET #4 | Input contact 1 |
| 10.051 | 50 | #4 | - | VEGAMET #4 | - |
| 10.052 | 51 | #4 | - | VEGAMET #4 | - |
| 10.053 | 52 | #4 | - | VEGAMET #4 | - |
| 10.054 | 53 | #4 | - | VEGAMET #4 | - |
| 10.055 | 54 | #4 | - | VEGAMET #4 | - |
| 10.056 | 55 | #4 | Status: Card | VEGAMET #4 | Status of inputs |
| 10.057 | 56 | #4 | Output contact 1 | VEGAMET #4 | Relay contact 1 |
| 10.058 | 57 | #4 | Output contact 2 | VEGAMET #4 | Relay contact 2 |
| 10.059 | 58 | #4 | Output contact 3 | VEGAMET #4 | Fail safe relay |
| 10.060 | 59 | #4 | Output contact 4 | VEGAMET #4 | - |
| 10.061 | 60 | #4 | Output contact 5 | VEGAMET #4 | - |
| 10.062 | 61 | #4 | Output contact 6 | VEGAMET #4 | - |
| 10.063 | 62 | #4 | Output contact 7 | VEGAMET #4 | - |
| 10.064 | 63 | #4 | Output contact 8 | VEGAMET #4 | Status of outputs |
| 10.065 | 64 | #5 | Output contact 9 | VEGAMET #5 | Input contact 2 |
| 10.066 | 65 | #5 | Output contact 10 | VEGAMET #5 | Input contact 1 |
| 10.067 | 66 | #5 | - | VEGAMET #5 | - |
| 10.068 | 67 | #5 | - | VEGAMET #5 | - |
| 10.069 | 68 | #5 | - | VEGAMET #5 | - |
| 10.070 | 69 | #5 | - | VEGAMET #5 | - |
| 10.071 | 70 | #5 | - | VEGAMET #5 | - |
| 10.072 | 71 | #5 | Status: Card | VEGAMET #5 | Status of inputs |
| 10.073 | 72 | #5 | Output contact 1 | VEGAMET #5 | Relay contact 1 |
| 10.074 | 73 | #5 | Output contact 2 | VEGAMET #5 | Relay contact 2 |
| 10.075 | 74 | #5 | Output contact 3 | VEGAMET #5 | Fail safe relay |
| 10.076 | 75 | #5 | Output contact 4 | VEGAMET #5 | - |
| 10.077 | 76 | #5 | Output contact 5 | VEGAMET #5 | - |
| 10.078 | 77 | #5 | Output contact 6 | VEGAMET #5 | - |
| 10.079 | 78 | #5 | Output contact 7 | VEGAMET #5 | - |
| 10.080 | 79 | #5 | Output contact 8 | VEGAMET #5 | Status of outputs |
| 10.081 | 80 | #6 | Output contact 9 | VEGAMET #6 | Input contact 2 |
| 10.082 | 81 | #6 | Output contact 10 | VEGAMET #6 | Input contact 1 |
| 10.083 | 82 | #6 | - | VEGAMET #6 | - |
| 10.084 | 83 | #6 | - | VEGAMET #6 | - |
| 10.085 | 84 | #6 | - | VEGAMET #6 | - |
| 10.086 | 85 | #6 | - | VEGAMET #6 | - |
| 10.087 | 86 | #6 | - | VEGAMET #6 | - |
| 10.088 | 87 | #6 | Status: Card | VEGAMET #6 | Status of inputs |
| 10.089 | 88 | #6 | Output contact 1 | VEGAMET #6 | Relay contact 1 |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|---|---|------------|-------------------|-------------------------------|------------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Switching status |
| 10.090 | 89 | #6 | Output contact 2 | VEGAMET #6 | Relay contact 2 |
| 10.091 | 90 | #6 | Output contact 3 | VEGAMET #6 | Fail safe relay |
| 10.092 | 91 | #6 | Output contact 4 | VEGAMET #6 | - |
| 10.093 | 92 | #6 | Output contact 5 | VEGAMET #6 | - |
| 10.094 | 93 | #6 | Output contact 6 | VEGAMET #6 | - |
| 10.095 | 94 | #6 | Output contact 7 | VEGAMET #6 | - |
| 10.096 | 95 | #6 | Output contact 8 | VEGAMET #6 | Status of outputs |
| 10.097 | 96 | #7 | Output contact 9 | VEGAMET #7 | Input contact 2 |
| 10.098 | 97 | #7 | Output contact 10 | VEGAMET #7 | Input contact 1 |
| 10.099 | 98 | #7 | - | VEGAMET #7 | - |
| 10.100 | 99 | #7 | - | VEGAMET #7 | - |
| 10.101 | 100 | #7 | - | VEGAMET #7 | - |
| 10.102 | 101 | #7 | - | VEGAMET #7 | - |
| 10.103 | 102 | #7 | - | VEGAMET #7 | - |
| 10.104 | 103 | #7 | Status: Card | VEGAMET #7 | Status of inputs |
| 10.105 | 104 | #7 | Output contact 1 | VEGAMET #7 | Relay contact 1 |
| 10.106 | 105 | #7 | Output contact 2 | VEGAMET #7 | Relay contact 2 |
| 10.107 | 106 | #7 | Output contact 3 | VEGAMET #7 | Fail safe relay |
| 10.108 | 107 | #7 | Output contact 4 | VEGAMET #7 | - |
| 10.109 | 108 | #7 | Output contact 5 | VEGAMET #7 | - |
| 10.110 | 109 | #7 | Output contact 6 | VEGAMET #7 | - |
| 10.111 | 110 | #7 | Output contact 7 | VEGAMET #7 | - |
| 10.112 | 111 | #7 | Output contact 8 | VEGAMET #7 | Status of outputs |
| 10.113 | 112 | #8 | Output contact 9 | VEGAMET #8 | Input contact 2 |
| 10.114 | 113 | #8 | Output contact 10 | VEGAMET #8 | Input contact 1 |
| 10.115 | 114 | #8 | - | VEGAMET #8 | - |
| 10.116 | 115 | #8 | - | VEGAMET #8 | - |
| 10.117 | 116 | #8 | - | VEGAMET #8 | - |
| 10.118 | 117 | #8 | - | VEGAMET #8 | - |
| 10.119 | 118 | #8 | - | VEGAMET #8 | - |
| 10.120 | 119 | #8 | Status: Card | VEGAMET #8 | Status of inputs |
| 10.121 | 120 | #8 | Output contact 1 | VEGAMET #8 | Relay contact 1 |
| 10.122 | 121 | #8 | Output contact 2 | VEGAMET #8 | Relay contact 2 |
| 10.123 | 122 | #8 | Output contact 3 | VEGAMET #8 | Fail safe relay |
| 10.124 | 123 | #8 | Output contact 4 | VEGAMET #8 | - |
| 10.125 | 124 | #8 | Output contact 5 | VEGAMET #8 | - |
| 10.126 | 125 | #8 | Output contact 6 | VEGAMET #8 | - |
| 10.127 | 126 | #8 | Output contact 7 | VEGAMET #8 | - |
| 10.128 | 127 | #8 | Output contact 8 | VEGAMET #8 | Status of outputs |
| 10.129 | 128 | #9 | Output contact 9 | VEGAMET #9 | Input contact 2 |
| 10.130 | 129 | #9 | Output contact 10 | VEGAMET #9 | Input contact 1 |
| 10.131 | 130 | #9 | - | VEGAMET #9 | - |
| 10.132 | 131 | #9 | - | VEGAMET #9 | - |
| 10.133 | 132 | #9 | - | VEGAMET #9 | - |
| 10.134 | 133 | #9 | - | VEGAMET #9 | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|-------------------------------------|-------------------------------------|------------|-------------------|-------------------------------|----------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Sw itching status |
| 10.135 | 134 | #9 | - | VEGAMET #9 | - |
| 10.136 | 135 | #9 | Status: Card | VEGAMET #9 | Status of inputs |
| 10.137 | 136 | #9 | Output contact 1 | VEGAMET #9 | Relay contact 1 |
| 10.138 | 137 | #9 | Output contact 2 | VEGAMET #9 | Relay contact 2 |
| 10.139 | 138 | #9 | Output contact 3 | VEGAMET #9 | Fail safe relay |
| 10.140 | 139 | #9 | Output contact 4 | VEGAMET #9 | - |
| 10.141 | 140 | #9 | Output contact 5 | VEGAMET #9 | - |
| 10.142 | 141 | #9 | Output contact 6 | VEGAMET #9 | - |
| 10.143 | 142 | #9 | Output contact 7 | VEGAMET #9 | - |
| 10.144 | 143 | #9 | Output contact 8 | VEGAMET #9 | Status of outputs |
| 10.145 | 144 | #10 | Output contact 9 | VEGAMET #10 | Input contact 2 |
| 10.146 | 145 | #10 | Output contact 10 | VEGAMET #10 | Input contact 1 |
| 10.147 | 146 | #10 | - | VEGAMET #10 | - |
| 10.148 | 147 | #10 | - | VEGAMET #10 | - |
| 10.149 | 148 | #10 | - | VEGAMET #10 | - |
| 10.150 | 149 | #10 | - | VEGAMET #10 | - |
| 10.151 | 150 | #10 | - | VEGAMET #10 | - |
| 10.152 | 151 | #10 | Status: Card | VEGAMET #10 | Status of inputs |
| 10.153 | 152 | #10 | Output contact 1 | VEGAMET #10 | Relay contact 1 |
| 10.154 | 153 | #10 | Output contact 2 | VEGAMET #10 | Relay contact 2 |
| 10.155 | 154 | #10 | Output contact 3 | VEGAMET #10 | Fail safe relay |
| 10.156 | 155 | #10 | Output contact 4 | VEGAMET #10 | - |
| 10.157 | 156 | #10 | Output contact 5 | VEGAMET #10 | - |
| 10.158 | 157 | #10 | Output contact 6 | VEGAMET #10 | - |
| 10.159 | 158 | #10 | Output contact 7 | VEGAMET #10 | - |
| 10.160 | 159 | #10 | Output contact 8 | VEGAMET #10 | Status of outputs |
| 10.161 | 160 | #11 | Output contact 9 | VEGAMET #11 | Input contact 2 |
| 10.162 | 161 | #11 | Output contact 10 | VEGAMET #11 | Input contact 1 |
| 10.163 | 162 | #11 | - | VEGAMET #11 | - |
| 10.164 | 163 | #11 | - | VEGAMET #11 | - |
| 10.165 | 164 | #11 | - | VEGAMET #11 | - |
| 10.166 | 165 | #11 | - | VEGAMET #11 | - |
| 10.167 | 166 | #11 | - | VEGAMET #11 | - |
| 10.168 | 167 | #11 | Status: Card | VEGAMET #11 | Status of inputs |
| 10.169 | 168 | #11 | Output contact 1 | VEGAMET #11 | Relay contact 1 |
| 10.170 | 169 | #11 | Output contact 2 | VEGAMET #11 | Relay contact 2 |
| 10.171 | 170 | #11 | Output contact 3 | VEGAMET #11 | Fail safe relay |
| 10.172 | 171 | #11 | Output contact 4 | VEGAMET #11 | - |
| 10.173 | 172 | #11 | Output contact 5 | VEGAMET #11 | - |
| 10.174 | 173 | #11 | Output contact 6 | VEGAMET #11 | - |
| 10.175 | 174 | #11 | Output contact 7 | VEGAMET #11 | - |
| 10.176 | 175 | #11 | Output contact 8 | VEGAMET #11 | Status of outputs |
| 10.177 | 176 | #12 | Output contact 9 | VEGAMET #12 | Input contact 2 |
| 10.178 | 177 | #12 | Output contact 10 | VEGAMET #12 | Input contact 1 |
| 10.179 | 178 | #12 | - | VEGAMET #12 | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|---|---|------------|-------------------|-------------------------------|---------------------------|
| | | Module no. | No. of outputs | DISBUS address | Status / Switching status |
| 10.180 | 179 | #12 | - | VEGAMET #12 | - |
| 10.181 | 180 | #12 | - | VEGAMET #12 | - |
| 10.182 | 181 | #12 | - | VEGAMET #12 | - |
| 10.183 | 182 | #12 | - | VEGAMET #12 | - |
| 10.184 | 183 | #12 | Status: Card | VEGAMET #12 | Status of inputs |
| 10.185 | 184 | #12 | Output contact 1 | VEGAMET #12 | Relay contact 1 |
| 10.186 | 185 | #12 | Output contact 2 | VEGAMET #12 | Relay contact 2 |
| 10.187 | 186 | #12 | Output contact 3 | VEGAMET #12 | Fail safe relay |
| 10.188 | 187 | #12 | Output contact 4 | VEGAMET #12 | - |
| 10.189 | 188 | #12 | Output contact 5 | VEGAMET #12 | - |
| 10.190 | 189 | #12 | Output contact 6 | VEGAMET #12 | - |
| 10.191 | 190 | #12 | Output contact 7 | VEGAMET #12 | - |
| 10.192 | 191 | #12 | Output contact 8 | VEGAMET #12 | Status of outputs |
| 10.193 | 192 | #13 | Output contact 9 | VEGAMET #13 | Input contact 2 |
| 10.194 | 193 | #13 | Output contact 10 | VEGAMET #13 | Input contact 1 |
| 10.195 | 194 | #13 | - | VEGAMET #13 | - |
| 10.196 | 195 | #13 | - | VEGAMET #13 | - |
| 10.197 | 196 | #13 | - | VEGAMET #13 | - |
| 10.198 | 197 | #13 | - | VEGAMET #13 | - |
| 10.199 | 198 | #13 | - | VEGAMET #13 | - |
| 10.200 | 199 | #13 | Status: Card | VEGAMET #13 | Status of inputs |
| 10.201 | 200 | #13 | Output contact 1 | VEGAMET #13 | Relay contact 1 |
| 10.202 | 201 | #13 | Output contact 2 | VEGAMET #13 | Relay contact 2 |
| 10.203 | 202 | #13 | Output contact 3 | VEGAMET #13 | Fail safe relay |
| 10.204 | 203 | #13 | Output contact 4 | VEGAMET #13 | - |
| 10.205 | 204 | #13 | Output contact 5 | VEGAMET #13 | - |
| 10.206 | 205 | #13 | Output contact 6 | VEGAMET #13 | - |
| 10.207 | 206 | #13 | Output contact 7 | VEGAMET #13 | - |
| 10.208 | 207 | #13 | Output contact 8 | VEGAMET #13 | Status of outputs |
| 10.209 | 208 | #14 | Output contact 9 | VEGAMET #14 | Input contact 2 |
| 10.210 | 209 | #14 | Output contact 10 | VEGAMET #14 | Input contact 1 |
| 10.211 | 210 | #14 | - | VEGAMET #14 | - |
| 10.212 | 211 | #14 | - | VEGAMET #14 | - |
| 10.213 | 212 | #14 | - | VEGAMET #14 | - |
| 10.214 | 213 | #14 | - | VEGAMET #14 | - |
| 10.215 | 214 | #14 | - | VEGAMET #14 | - |
| 10.216 | 215 | #14 | Status: Card | VEGAMET #14 | Status of inputs |
| 10.217 | 216 | #14 | Output contact 1 | VEGAMET #14 | Relay contact 1 |
| 10.218 | 217 | #14 | Output contact 2 | VEGAMET #14 | Relay contact 2 |
| 10.219 | 218 | #14 | Output contact 3 | VEGAMET #14 | Fail safe relay |
| 10.220 | 219 | #14 | Output contact 4 | VEGAMET #14 | - |
| 10.221 | 220 | #14 | Output contact 5 | VEGAMET #14 | - |
| 10.222 | 221 | #14 | Output contact 6 | VEGAMET #14 | - |
| 10.223 | 222 | #14 | Output contact 7 | VEGAMET #14 | - |
| 10.224 | 223 | #14 | Output contact 8 | VEGAMET #14 | Status of outputs |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|-------------------------------------|-------------------------------------|------------|-------------------|-------------------------------|----------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Sw itching status |
| 10.225 | 224 | #15 | Output contact 9 | VEGAMET #15 | Input contact 2 |
| 10.226 | 225 | #15 | Output contact 10 | VEGAMET #15 | Input contact 1 |
| 10.227 | 226 | #15 | - | VEGAMET #15 | - |
| 10.228 | 227 | #15 | - | VEGAMET #15 | - |
| 10.229 | 228 | #15 | - | VEGAMET #15 | - |
| 10.230 | 229 | #15 | - | VEGAMET #15 | - |
| 10.231 | 230 | #15 | - | VEGAMET #15 | - |
| 10.232 | 231 | #15 | Status: Card | VEGAMET #15 | Status of inputs |
| 10.233 | 232 | #15 | Output contact 1 | VEGAMET #15 | Relay contact 1 |
| 10.234 | 233 | #15 | Output contact 2 | VEGAMET #15 | Relay contact 2 |
| 10.235 | 234 | #15 | Output contact 3 | VEGAMET #15 | Fail safe relay |
| 10.236 | 235 | #15 | Output contact 4 | VEGAMET #15 | - |
| 10.237 | 236 | #15 | Output contact 5 | VEGAMET #15 | - |
| 10.238 | 237 | #15 | Output contact 6 | VEGAMET #15 | - |
| 10.239 | 238 | #15 | Output contact 7 | VEGAMET #15 | - |
| 10.240 | 239 | #15 | Output contact 8 | VEGAMET #15 | Status of outputs |
| 10.241 | 240 | #16 | Output contact 9 | - | - |
| 10.242 | 241 | #16 | Output contact 10 | - | - |
| 10.243 | 242 | #16 | - | - | - |
| 10.244 | 243 | #16 | - | - | - |
| 10.245 | 244 | #16 | - | - | - |
| 10.246 | 245 | #16 | - | - | - |
| 10.247 | 246 | #16 | - | - | - |
| 10.248 | 247 | #16 | Status: Card | - | - |
| 10.249 | 248 | #16 | Output contact 1 | - | - |
| 10.250 | 249 | #16 | Output contact 2 | - | - |
| 10.251 | 250 | #16 | Output contact 3 | - | - |
| 10.252 | 251 | #16 | Output contact 4 | - | - |
| 10.253 | 252 | #16 | Output contact 5 | - | - |
| 10.254 | 253 | #16 | Output contact 6 | - | - |
| 10.255 | 254 | #16 | Output contact 7 | - | - |
| 10.256 | 255 | #16 | Output contact 8 | - | - |
| 10.257 | 256 | #17 | Output contact 9 | - | - |
| 10.258 | 257 | #17 | Output contact 10 | - | - |
| 10.259 | 258 | #17 | - | - | - |
| 10.260 | 259 | #17 | - | - | - |
| 10.261 | 260 | #17 | - | - | - |
| 10.262 | 261 | #17 | - | - | - |
| 10.263 | 262 | #17 | - | - | - |
| 10.264 | 263 | #17 | Status: Card | - | - |
| 10.265 | 264 | #17 | Output contact 1 | - | - |
| 10.266 | 265 | #17 | Output contact 2 | - | - |
| 10.267 | 266 | #17 | Output contact 3 | - | - |
| 10.268 | 267 | #17 | Output contact 4 | - | - |
| 10.269 | 268 | #17 | Output contact 5 | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|--|--|------------|-------------------|-------------------------------|------------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Switching status |
| 10.270 | 269 | #17 | Output contact 6 | - | - |
| 10.271 | 270 | #17 | Output contact 7 | - | - |
| 10.272 | 271 | #17 | Output contact 8 | - | - |
| 10.273 | 272 | #18 | Output contact 9 | - | - |
| 10.274 | 273 | #18 | Output contact 10 | - | - |
| 10.275 | 274 | #18 | - | - | - |
| 10.276 | 275 | #18 | - | - | - |
| 10.277 | 276 | #18 | - | - | - |
| 10.278 | 277 | #18 | - | - | - |
| 10.279 | 278 | #18 | - | - | - |
| 10.280 | 279 | #18 | Status: Card | - | - |
| 10.281 | 280 | #18 | Output contact 1 | - | - |
| 10.282 | 281 | #18 | Output contact 2 | - | - |
| 10.283 | 282 | #18 | Output contact 3 | - | - |
| 10.284 | 283 | #18 | Output contact 4 | - | - |
| 10.285 | 284 | #18 | Output contact 5 | - | - |
| 10.286 | 285 | #18 | Output contact 6 | - | - |
| 10.287 | 286 | #18 | Output contact 7 | - | - |
| 10.288 | 287 | #18 | Output contact 8 | - | - |
| 10.289 | 288 | #19 | Output contact 9 | - | - |
| 10.290 | 289 | #19 | Output contact 10 | - | - |
| 10.291 | 290 | #19 | - | - | - |
| 10.292 | 291 | #19 | - | - | - |
| 10.293 | 292 | #19 | - | - | - |
| 10.294 | 293 | #19 | - | - | - |
| 10.295 | 294 | #19 | - | - | - |
| 10.296 | 295 | #19 | Status: Card | - | - |
| 10.297 | 296 | #19 | Output contact 1 | - | - |
| 10.298 | 297 | #19 | Output contact 2 | - | - |
| 10.299 | 298 | #19 | Output contact 3 | - | - |
| 10.300 | 299 | #19 | Output contact 4 | - | - |
| 10.301 | 300 | #19 | Output contact 5 | - | - |
| 10.302 | 301 | #19 | Output contact 6 | - | - |
| 10.303 | 302 | #19 | Output contact 7 | - | - |
| 10.304 | 303 | #19 | Output contact 8 | - | - |
| 10.305 | 304 | #20 | Output contact 9 | - | - |
| 10.306 | 305 | #20 | Output contact 10 | - | - |
| 10.307 | 306 | #20 | - | - | - |
| 10.308 | 307 | #20 | - | - | - |
| 10.309 | 308 | #20 | - | - | - |
| 10.310 | 309 | #20 | - | - | - |
| 10.311 | 310 | #20 | - | - | - |
| 10.312 | 311 | #20 | Status: Card | - | - |
| 10.313 | 312 | #20 | Output contact 1 | - | - |
| 10.314 | 313 | #20 | Output contact 2 | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|-------------------------------------|-------------------------------------|------------|-------------------|-------------------------------|----------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Sw itching status |
| 10.315 | 314 | #20 | Output contact 3 | - | - |
| 10.316 | 315 | #20 | Output contact 4 | - | - |
| 10.317 | 316 | #20 | Output contact 5 | - | - |
| 10.318 | 317 | #20 | Output contact 6 | - | - |
| 10.319 | 318 | #20 | Output contact 7 | - | - |
| 10.320 | 319 | #20 | Output contact 8 | - | - |
| 10.321 | 320 | #21 | Output contact 9 | - | - |
| 10.322 | 321 | #21 | Output contact 10 | - | - |
| 10.323 | 322 | #21 | - | - | - |
| 10.324 | 323 | #21 | - | - | - |
| 10.325 | 324 | #21 | - | - | - |
| 10.326 | 325 | #21 | - | - | - |
| 10.327 | 326 | #21 | - | - | - |
| 10.328 | 327 | #21 | Status: Card | - | - |
| 10.329 | 328 | #21 | Output contact 1 | - | - |
| 10.330 | 329 | #21 | Output contact 2 | - | - |
| 10.331 | 330 | #21 | Output contact 3 | - | - |
| 10.332 | 331 | #21 | Output contact 4 | - | - |
| 10.333 | 332 | #21 | Output contact 5 | - | - |
| 10.334 | 333 | #21 | Output contact 6 | - | - |
| 10.335 | 334 | #21 | Output contact 7 | - | - |
| 10.336 | 335 | #21 | Output contact 8 | - | - |
| 10.337 | 336 | #22 | Output contact 9 | - | - |
| 10.338 | 337 | #22 | Output contact 10 | - | - |
| 10.339 | 338 | #22 | - | - | - |
| 10.340 | 339 | #22 | - | - | - |
| 10.341 | 340 | #22 | - | - | - |
| 10.342 | 341 | #22 | - | - | - |
| 10.343 | 342 | #22 | - | - | - |
| 10.344 | 343 | #22 | Status: Card | - | - |
| 10.345 | 344 | #22 | Output contact 1 | - | - |
| 10.346 | 345 | #22 | Output contact 2 | - | - |
| 10.347 | 346 | #22 | Output contact 3 | - | - |
| 10.348 | 347 | #22 | Output contact 4 | - | - |
| 10.349 | 348 | #22 | Output contact 5 | - | - |
| 10.350 | 349 | #22 | Output contact 6 | - | - |
| 10.351 | 350 | #22 | Output contact 7 | - | - |
| 10.352 | 351 | #22 | Output contact 8 | - | - |
| 10.353 | 352 | #23 | Output contact 9 | - | - |
| 10.354 | 353 | #23 | Output contact 10 | - | - |
| 10.355 | 354 | #23 | - | - | - |
| 10.356 | 355 | #23 | - | - | - |
| 10.357 | 356 | #23 | - | - | - |
| 10.358 | 357 | #23 | - | - | - |
| 10.359 | 358 | #23 | - | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|---|---|------------|-------------------|-------------------------------|------------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Switching status |
| 10.360 | 359 | #23 | Status: Card | - | - |
| 10.361 | 360 | #23 | Output contact 1 | - | - |
| 10.362 | 361 | #23 | Output contact 2 | - | - |
| 10.363 | 362 | #23 | Output contact 3 | - | - |
| 10.364 | 363 | #23 | Output contact 4 | - | - |
| 10.365 | 364 | #23 | Output contact 5 | - | - |
| 10.366 | 365 | #23 | Output contact 6 | - | - |
| 10.367 | 366 | #23 | Output contact 7 | - | - |
| 10.368 | 367 | #23 | Output contact 8 | - | - |
| 10.369 | 368 | #24 | Output contact 9 | - | - |
| 10.370 | 369 | #24 | Output contact 10 | - | - |
| 10.371 | 370 | #24 | - | - | - |
| 10.372 | 371 | #24 | - | - | - |
| 10.373 | 372 | #24 | - | - | - |
| 10.374 | 373 | #24 | - | - | - |
| 10.375 | 374 | #24 | - | - | - |
| 10.376 | 375 | #24 | Status: Card | - | - |
| 10.377 | 376 | #24 | Output contact 1 | - | - |
| 10.378 | 377 | #24 | Output contact 2 | - | - |
| 10.379 | 378 | #24 | Output contact 3 | - | - |
| 10.380 | 379 | #24 | Output contact 4 | - | - |
| 10.381 | 380 | #24 | Output contact 5 | - | - |
| 10.382 | 381 | #24 | Output contact 6 | - | - |
| 10.383 | 382 | #24 | Output contact 7 | - | - |
| 10.384 | 383 | #24 | Output contact 8 | - | - |
| 10.385 | 384 | #25 | Output contact 9 | - | - |
| 10.386 | 385 | #25 | Output contact 10 | - | - |
| 10.387 | 386 | #25 | - | - | - |
| 10.388 | 387 | #25 | - | - | - |
| 10.389 | 388 | #25 | - | - | - |
| 10.390 | 389 | #25 | - | - | - |
| 10.391 | 390 | #25 | - | - | - |
| 10.392 | 391 | #25 | Status: Card | - | - |
| 10.393 | 392 | #25 | Output contact 1 | - | - |
| 10.394 | 393 | #25 | Output contact 2 | - | - |
| 10.395 | 394 | #25 | Output contact 3 | - | - |
| 10.396 | 395 | #25 | Output contact 4 | - | - |
| 10.397 | 396 | #25 | Output contact 5 | - | - |
| 10.398 | 397 | #25 | Output contact 6 | - | - |
| 10.399 | 398 | #25 | Output contact 7 | - | - |
| 10.400 | 399 | #25 | Output contact 8 | - | - |
| 10.401 | 400 | #26 | Output contact 9 | - | - |
| 10.402 | 401 | #26 | Output contact 10 | - | - |
| 10.403 | 402 | #26 | - | - | - |
| 10.404 | 403 | #26 | - | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|-------------------------------------|-------------------------------------|------------|-------------------|-------------------------------|----------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Sw itching status |
| 10.405 | 404 | #26 | - | - | - |
| 10.406 | 405 | #26 | - | - | - |
| 10.407 | 406 | #26 | - | - | - |
| 10.408 | 407 | #26 | Status: Card | - | - |
| 10.409 | 408 | #26 | Output contact 1 | - | - |
| 10.410 | 409 | #26 | Output contact 2 | - | - |
| 10.411 | 410 | #26 | Output contact 3 | - | - |
| 10.412 | 411 | #26 | Output contact 4 | - | - |
| 10.413 | 412 | #26 | Output contact 5 | - | - |
| 10.414 | 413 | #26 | Output contact 6 | - | - |
| 10.415 | 414 | #26 | Output contact 7 | - | - |
| 10.416 | 415 | #26 | Output contact 8 | - | - |
| 10.417 | 416 | #27 | Output contact 9 | - | - |
| 10.418 | 417 | #27 | Output contact 10 | - | - |
| 10.419 | 418 | #27 | - | - | - |
| 10.420 | 419 | #27 | - | - | - |
| 10.421 | 420 | #27 | - | - | - |
| 10.422 | 421 | #27 | - | - | - |
| 10.423 | 422 | #27 | - | - | - |
| 10.424 | 423 | #27 | Status: Card | - | - |
| 10.425 | 424 | #27 | Output contact 1 | - | - |
| 10.426 | 425 | #27 | Output contact 2 | - | - |
| 10.427 | 426 | #27 | Output contact 3 | - | - |
| 10.428 | 427 | #27 | Output contact 4 | - | - |
| 10.429 | 428 | #27 | Output contact 5 | - | - |
| 10.430 | 429 | #27 | Output contact 6 | - | - |
| 10.431 | 430 | #27 | Output contact 7 | - | - |
| 10.432 | 431 | #27 | Output contact 8 | - | - |
| 10.433 | 432 | #28 | Output contact 9 | - | - |
| 10.434 | 433 | #28 | Output contact 10 | - | - |
| 10.435 | 434 | #28 | - | - | - |
| 10.436 | 435 | #28 | - | - | - |
| 10.437 | 436 | #28 | - | - | - |
| 10.438 | 437 | #28 | - | - | - |
| 10.439 | 438 | #28 | - | - | - |
| 10.440 | 439 | #28 | Status: Card | - | - |
| 10.441 | 440 | #28 | Output contact 1 | - | - |
| 10.442 | 441 | #28 | Output contact 2 | - | - |
| 10.443 | 442 | #28 | Output contact 3 | - | - |
| 10.444 | 443 | #28 | Output contact 4 | - | - |
| 10.445 | 444 | #28 | Output contact 5 | - | - |
| 10.446 | 445 | #28 | Output contact 6 | - | - |
| 10.447 | 446 | #28 | Output contact 7 | - | - |
| 10.448 | 447 | #28 | Output contact 8 | - | - |
| 10.449 | 448 | #29 | Output contact 9 | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|--|--|------------|-------------------|-------------------------------|------------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Switching status |
| 10.450 | 449 | #29 | Output contact 10 | - | - |
| 10.451 | 450 | #29 | - | - | - |
| 10.452 | 451 | #29 | - | - | - |
| 10.453 | 452 | #29 | - | - | - |
| 10.454 | 453 | #29 | - | - | - |
| 10.455 | 454 | #29 | - | - | - |
| 10.456 | 455 | #29 | Status: Card | - | - |
| 10.457 | 456 | #29 | Output contact 1 | - | - |
| 10.458 | 457 | #29 | Output contact 2 | - | - |
| 10.459 | 458 | #29 | Output contact 3 | - | - |
| 10.460 | 459 | #29 | Output contact 4 | - | - |
| 10.461 | 460 | #29 | Output contact 5 | - | - |
| 10.462 | 461 | #29 | Output contact 6 | - | - |
| 10.463 | 462 | #29 | Output contact 7 | - | - |
| 10.464 | 463 | #29 | Output contact 8 | - | - |
| 10.465 | 464 | #30 | Output contact 9 | - | - |
| 10.466 | 465 | #30 | Output contact 10 | - | - |
| 10.467 | 466 | #30 | - | - | - |
| 10.468 | 467 | #30 | - | - | - |
| 10.469 | 468 | #30 | - | - | - |
| 10.470 | 469 | #30 | - | - | - |
| 10.471 | 470 | #30 | - | - | - |
| 10.472 | 471 | #30 | Status: Card | - | - |
| 10.473 | 472 | #30 | Output contact 1 | - | - |
| 10.474 | 473 | #30 | Output contact 2 | - | - |
| 10.475 | 474 | #30 | Output contact 3 | - | - |
| 10.476 | 475 | #30 | Output contact 4 | - | - |
| 10.477 | 476 | #30 | Output contact 5 | - | - |
| 10.478 | 477 | #30 | Output contact 6 | - | - |
| 10.479 | 478 | #30 | Output contact 7 | - | - |
| 10.480 | 479 | #30 | Output contact 8 | - | - |
| 10.481 | 480 | #31 | Output contact 9 | - | - |
| 10.482 | 481 | #31 | Output contact 10 | - | - |
| 10.483 | 482 | #31 | - | - | - |
| 10.484 | 483 | #31 | - | - | - |
| 10.485 | 484 | #31 | - | - | - |
| 10.486 | 485 | #31 | - | - | - |
| 10.487 | 486 | #31 | - | - | - |
| 10.488 | 487 | #31 | Status: Card | - | - |
| 10.489 | 488 | #31 | Output contact 1 | - | - |
| 10.490 | 489 | #31 | Output contact 2 | - | - |
| 10.491 | 490 | #31 | Output contact 3 | - | - |
| 10.492 | 491 | #31 | Output contact 4 | - | - |
| 10.493 | 492 | #31 | Output contact 5 | - | - |
| 10.494 | 493 | #31 | Output contact 6 | - | - |

| Register word address in Modicon | Register word address in VEGACOM | VEGALOG | | VEGAMET 513, 514, 515, 614 | |
|-------------------------------------|-------------------------------------|------------|-------------------|-------------------------------|-------------------------------|
| | | Module no. | No. of output | DISBUS address | Status / Sw itching status |
| 10.495 | 494 | #31 | Output contact 7 | - | - |
| 10.496 | 495 | #31 | Output contact 8 | - | - |
| 10.497 | 496 | #32 | Output contact 9 | - | - |
| 10.498 | 497 | #32 | Output contact 10 | - | - |
| 10.499 | 498 | #32 | - | - | - |
| 10.500 | 499 | #32 | - | - | - |
| 10.501 | 500 | #32 | - | - | - |
| 10.502 | 501 | #32 | - | - | - |
| 10.503 | 502 | #32 | - | - | - |
| 10.504 | 503 | #32 | Status: Card | - | - |
| 10.505 | 504 | #32 | Output contact 1 | - | - |
| 10.506 | 505 | #32 | Output contact 2 | - | - |
| 10.507 | 506 | #32 | Output contact 3 | - | - |
| 10.508 | 507 | #32 | Output contact 4 | - | - |
| 10.509 | 508 | #32 | Output contact 5 | - | - |
| 10.510 | 509 | #32 | Output contact 6 | - | - |
| 10.511 | 510 | #32 | Output contact 7 | - | - |
| 10.512 | 511 | #32 | Output contact 8 | - | - |

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The statements on types, application, use and operating conditions of the sensors and processing systems correspond to the latest information at the time of printing.

Technical data subject to alterations