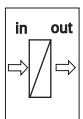
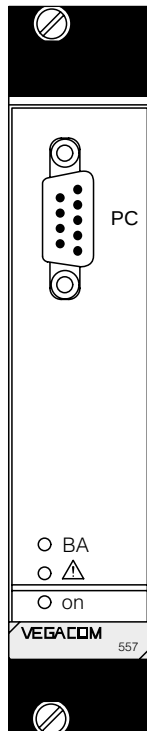


Operating Instructions

VEGACOM 557

Modbus protocol



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Supplement A 50

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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.

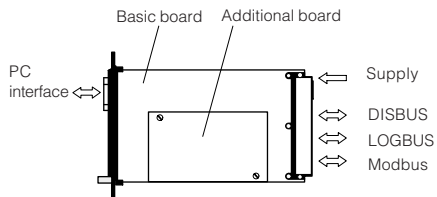
1.2 Configuration

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.

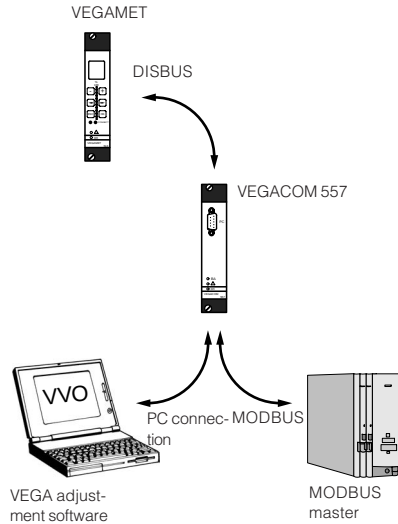
VVO = VEGA Visual Operating

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

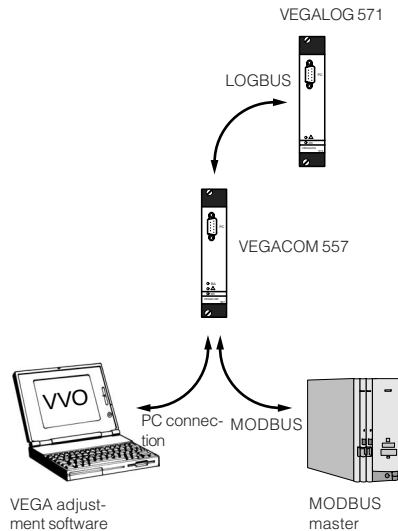
VV = Visual VEGA

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

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



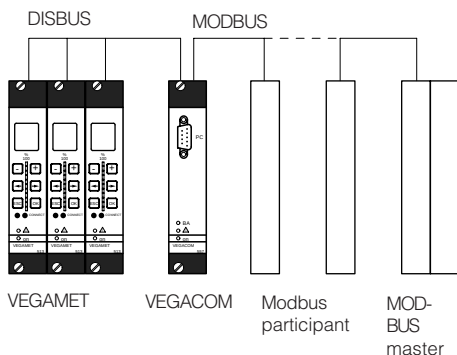
VEGACOM 557 as DISBUS participant



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.



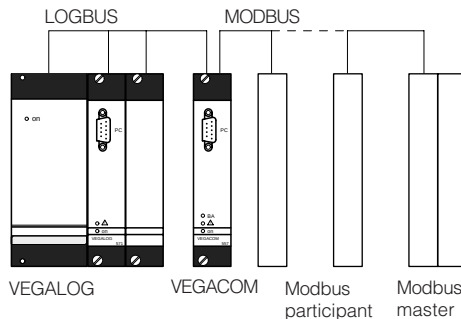
Connection VEGACOM 557 to DISBUS

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.

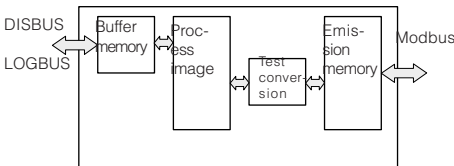
Max. two VEGACOM 557 can be connected to the same LOGBUS. The addressing for clear identification is made automatically on LOGBUS.

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.

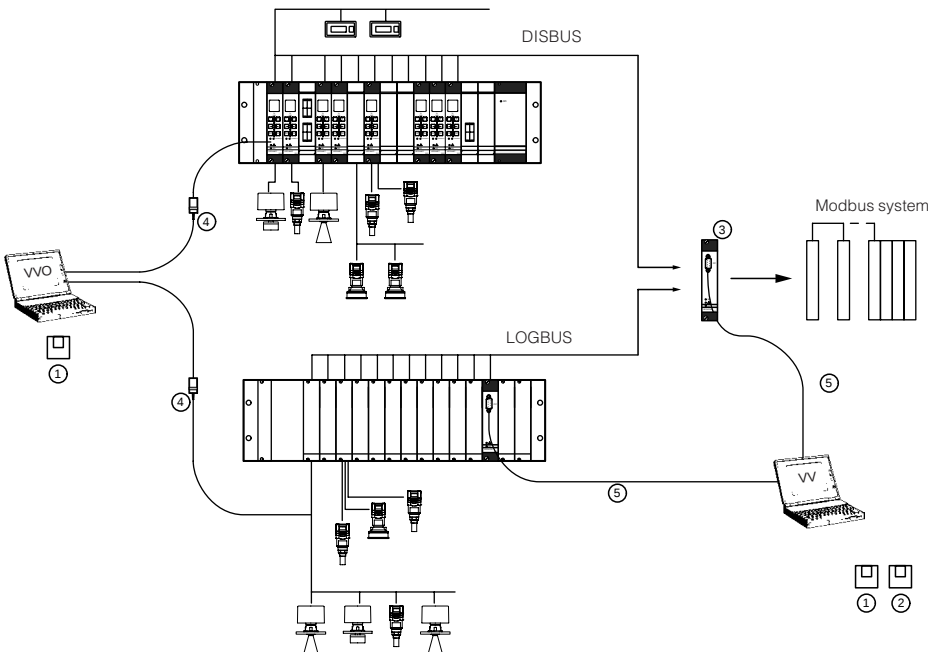
The adjustment is menu-driven and window oriented. No matter if a radar sensor, several connected signal conditioning instruments or a VEGALOG should be adjusted via the PC, the procedure is always the same. As another possibility, measured values and fault signals of the entire processing facility can 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.

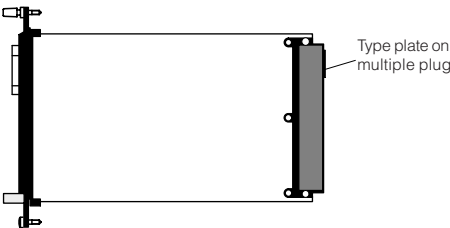
5 RS 232 connection cable (interlink cable)

Connection cable between PC and VEGALOG 571-CPU or VEGACOM 557

1.4 Type plate

Type plate

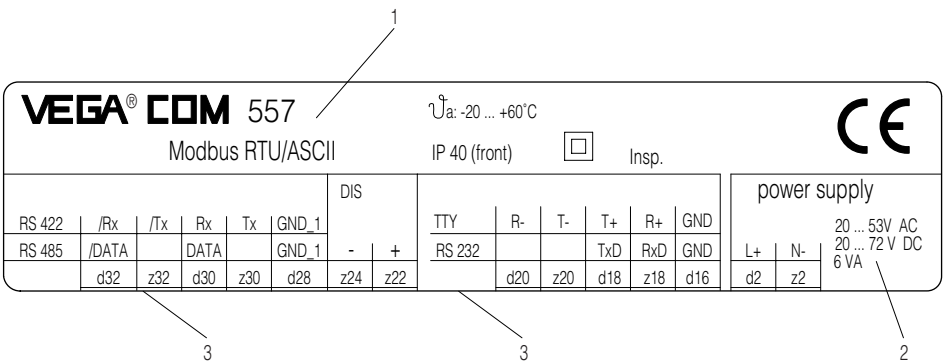
Before mounting and electrical connection, please check if you are using the correct version of VEGACOM 557. Please note the type plate, located below the multiple plug.



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 V AC (20 ... 53 V), 50/60 Hz or = 24 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 x 1.5 mm ²

Indicating elements

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

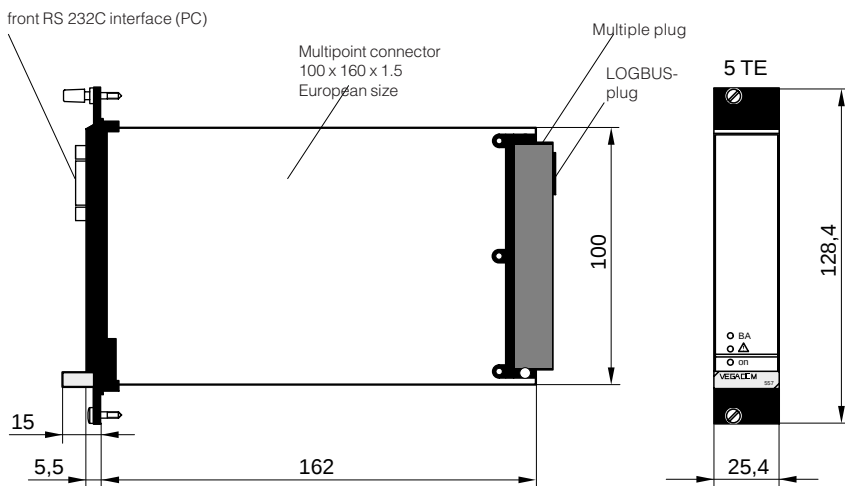
Ambient conditions

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

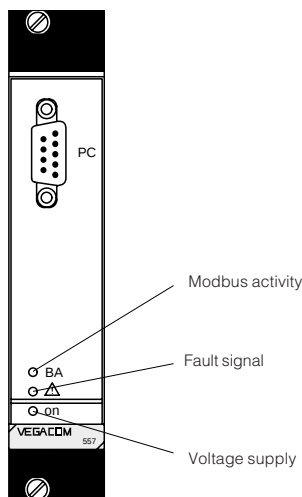
1.6 Dimensions



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:

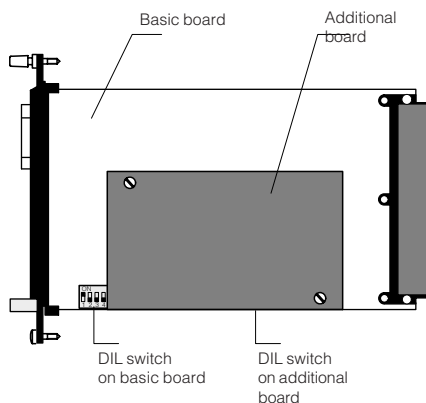
- red LED flashing: DISBUS/LOGBUS-error
- irregularly flashing: no PC/DCS outputs assigned
- permanent light: hardware error or special function "Freeze Mode"

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).

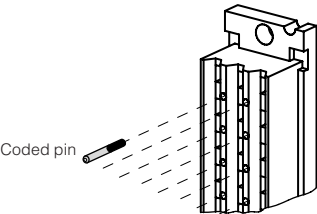
Coding

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

The coding system consists of:

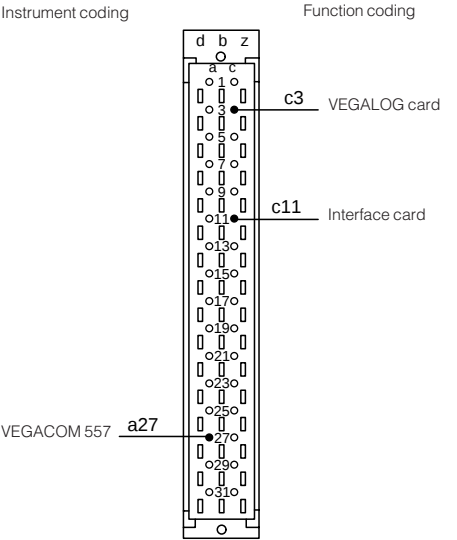
- three coded pins in the multipoint connector
- three holes in the multiple plug of VEGACOM 557.

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.



Plug-in socket of VEGACOM 557

	Instrument coding	Function coding
VEGACOM 557	a27	c3/c11



Positioning of the coded pins

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
- Termini-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

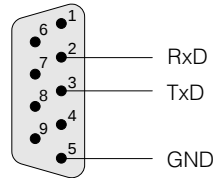
This housing is already equipped with a multipoint connector. Before mounting, please check if the housing is equipped with a power supply unit or not.

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

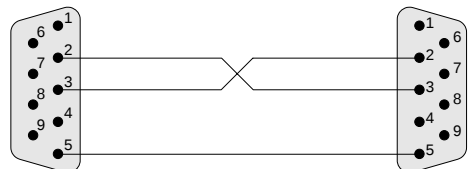
Pin	Description	I/O
2	RxD receive data	I
3	TxD transmit data	O
5	GND ground	–

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.



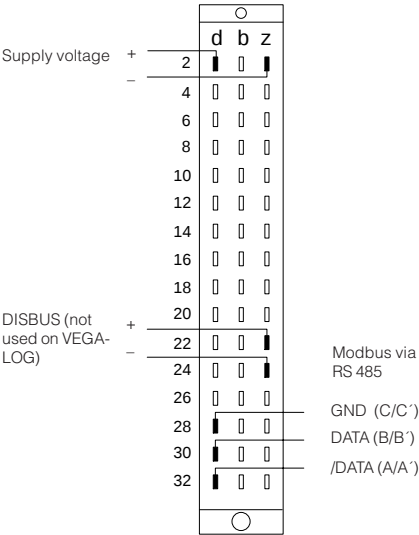
Wiring proposal for interlink cable

Connection via modem

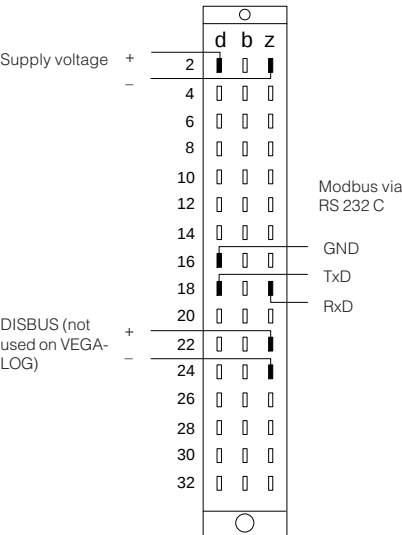
For remote parameter adjustment, it is possible to connect the PC interface via a modem. In such a case, the modem cable that comes with the respective modem should be used. Modem operation is supported by VEGACOM 557 from software version 2.11. Further information on the remote parameter adjustment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

Connections of the multiple plug (rear)

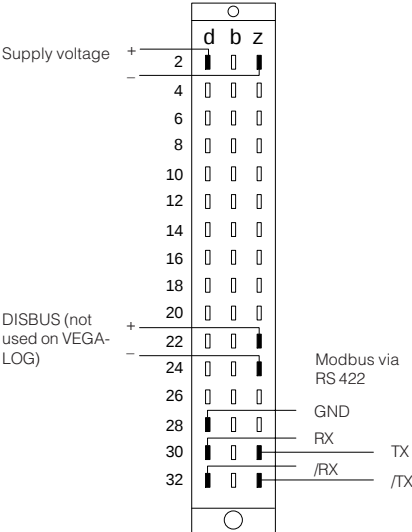
For connection of VEGACOM 557 to the existing Modbus system, all standard interfaces are available. The power supply of the instrument and the connection to the VEGA system remain always the same. The following illustrations show the respective terminal assignments of the Modbus depending on the selected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



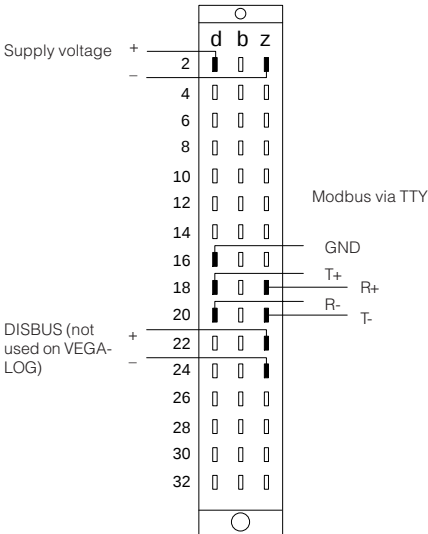
Wiring regulation for Modbus connection via **RS 485**



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

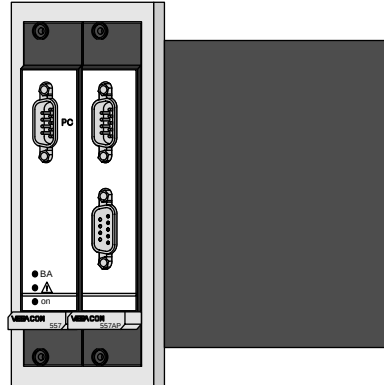


Wiring regulation for Modbus connection via **RS 422**



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

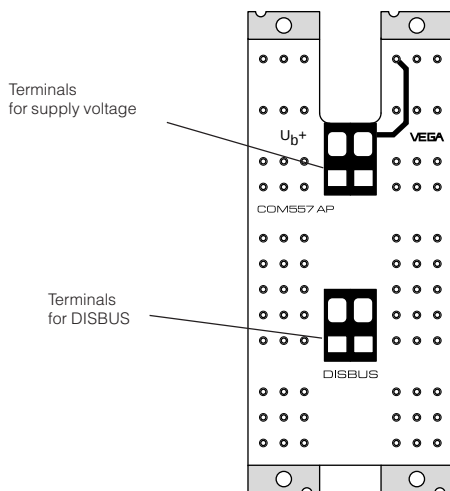
With the bus board (part of the carrier BGT LOG 571) connection to LOGBUS is made automatically when inserting VEGACOM 557.

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!

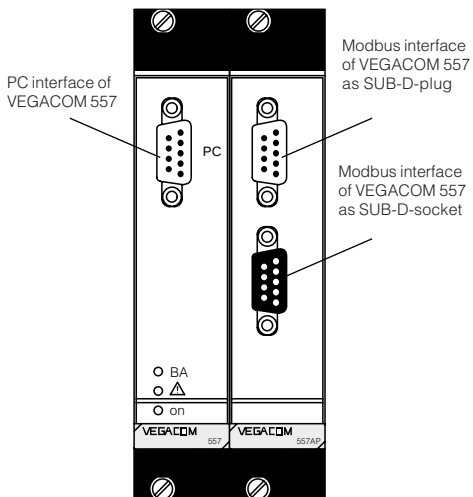
BGT 596

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)



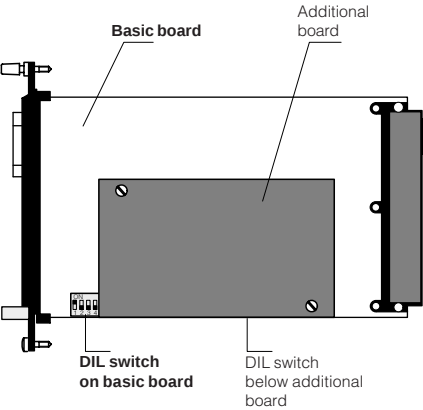
Front view with SUB-D-connections of VEGACOM 557 and VEGACOM 557AP

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.

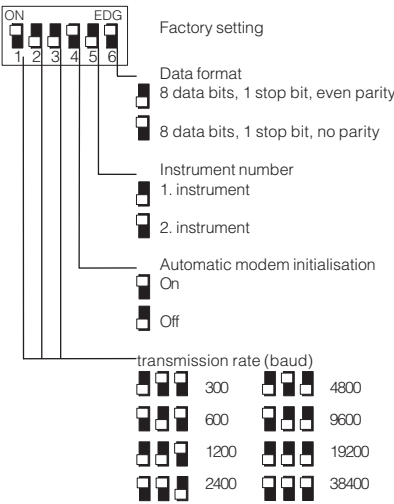
Automatic modem initialization

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.

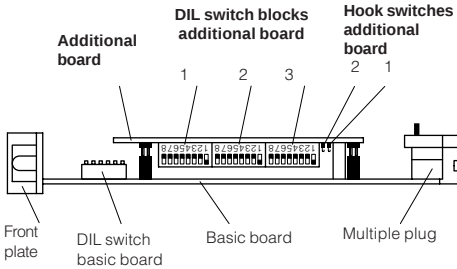
In the following diagram, you see all possible adjustment combinations for configuration of the PC interface.



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

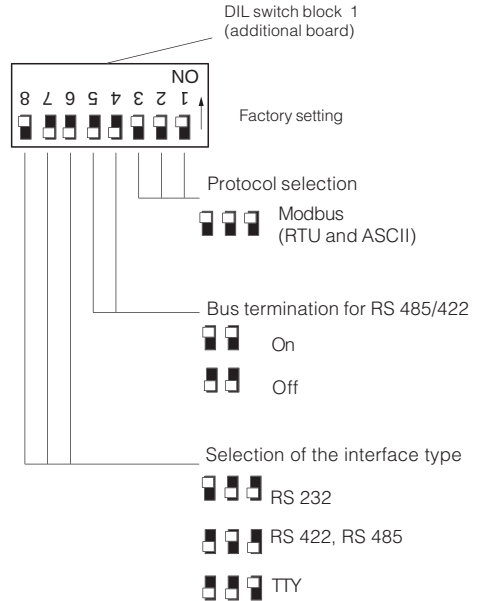
- selection of the baud rate
- number of data bits
- mode for parity bit
- protocol mode (Modbus)
- definition of the measured value image

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.



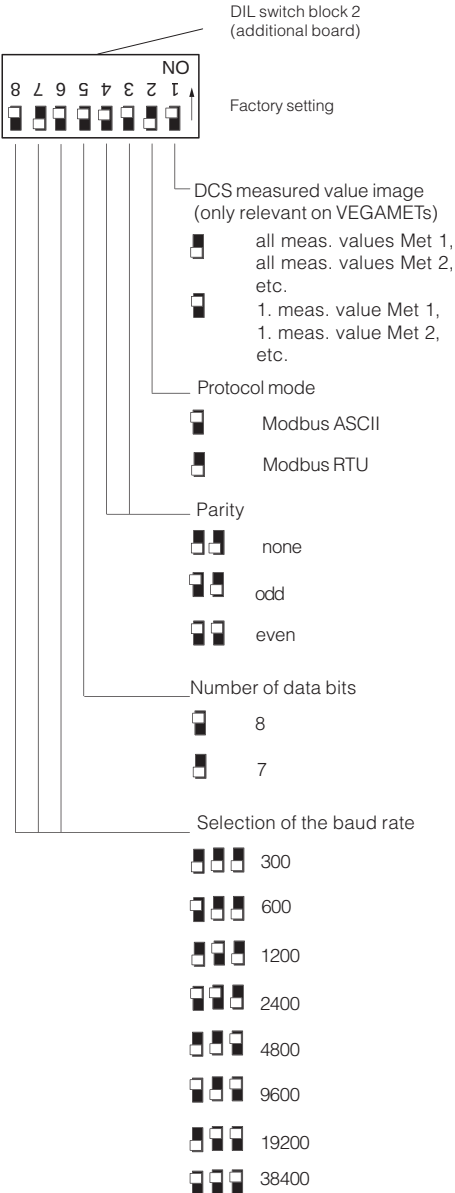
Adjustment possibilities for DIL switch block 1 on the additional board

Note:

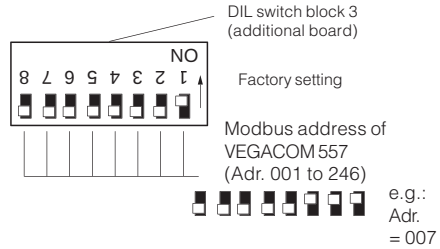
When selecting the interfaces TTY and RS 232, the hook switches must also be set to the respective position.

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:

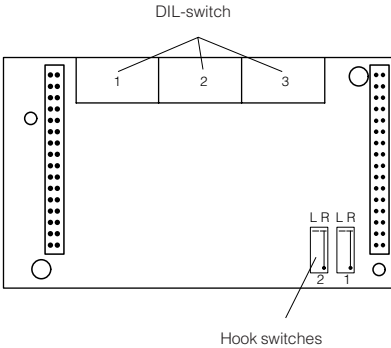
With the switch for the adjustment of the Modbus address (DIL-switch block 3), it is theoretically possible to adjust addresses in the range of 0 to 255. However, in reality only address 1 to 246 are directly adjustable. Address adjustments outside the range are converted as follows:

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.

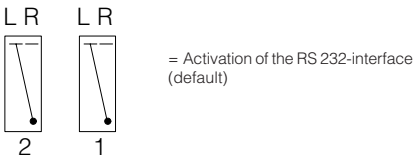
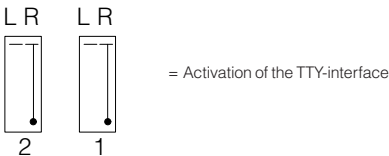
Hook switches (additional board)

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:

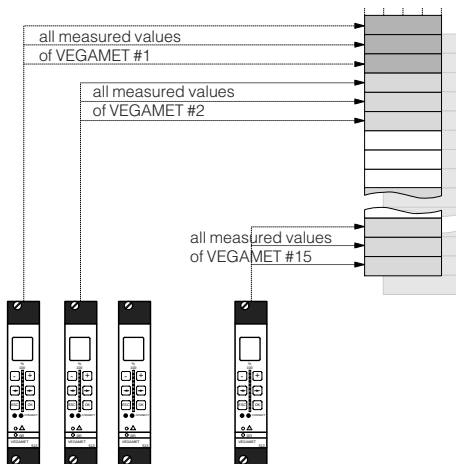
- Function code 01 (= Read Coil Status) or alternatively through
- Function code 02 (= Read Input Status).

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

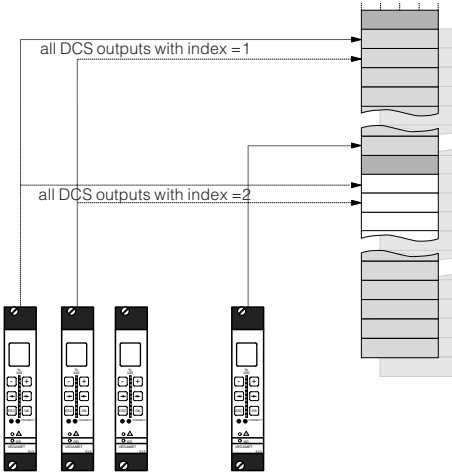
The addressing of the measured values for Modbus systems is "word-orientated". In VEGACOM 557 one measured value is represented by two words, the first word contains the real measured value, the next higher word the respective status information. In the standard, "register word" is used instead of the 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:

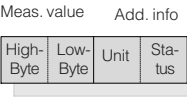
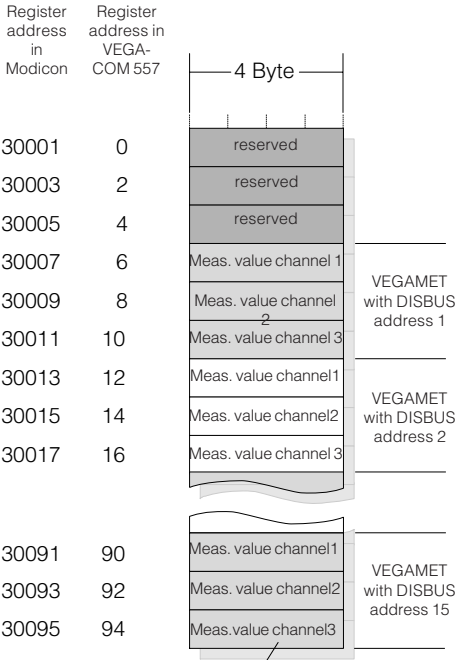
When addressing register words, all addresses between 0 and 65 535 can be used for VEGACOM 557. For access to the intermediate storage, VEGACOM 557 generally uses only the last 3 digits of the address.

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

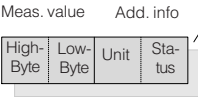
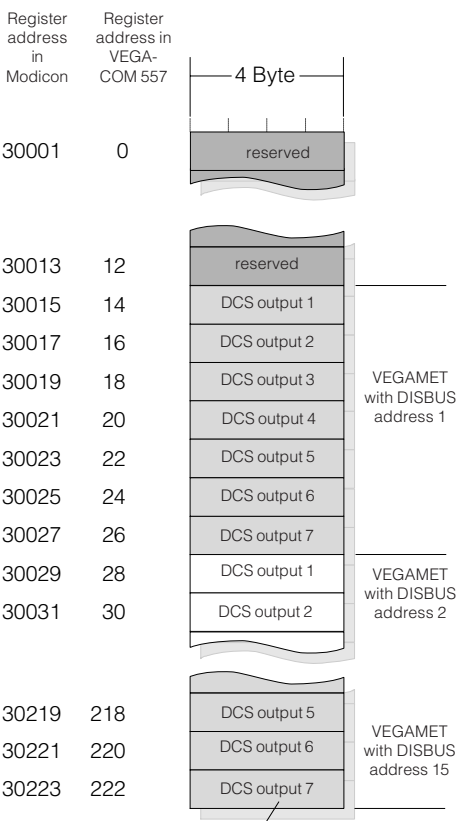
Addressing of measured value when connected to DISBUS with grouping acc. to VEGAMET address (switch 1 of DIL switch block 2 is in position OFF):

Case 1:
There are only instruments of type VEGAMET 509 or 512 connected.



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.



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.

Register address in Modicon	Register address in VEGA-COM 557	4 Byte	VEGAMET with DISBUS address =
30001	0	reserved	
30003	2	Meas. value channel 1	1
30005	4	Meas. value channel 1	2
30007	6	Meas. value channel 1	3
30009	8	Meas. value channel 1	4

30031	30	Meas. value channel 1	15
30033	32	reserved	
30035	34	Meas. value channel 2	1
30037	36	Meas. value channel 2	2
30039	38	Meas. value channel 2	3

30087	86	Meas. value channel 3	11
30089	88	Meas. value channel 3	12
30091	90	Meas. value channel 3	13
30093	92	Meas. value channel 3	14
30095	94	Meas. value channel 3	15

Meas. value		Add. info	
High-Byte	Low-Byte	Unit	Status

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

Case 2:

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

Register address in Modicon	Register address in VEGA-COM 557	4 Byte	VEGAMET with DISBUS address =
30001	0	reserved	
30003	2	DCS output 1	1
30005	4	DCS output 1	2
30007	6	DCS output 1	3
30009	8	DCS output 1	4

30031	30	DCS output 1	15
30033	32	reserved	
30035	34	DCS output 2	1
30037	36	DCS output 2	2
30039	38	DCS output 2	3

30215	214	DCS output 7	11
30217	216	DCS output 7	12
30219	218	DCS output 7	13
30221	220	DCS output 7	14
30223	222	DCS output 7	15

Meas. value		Add. info	
High-Byte	Low-Byte	Unit	Status

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)

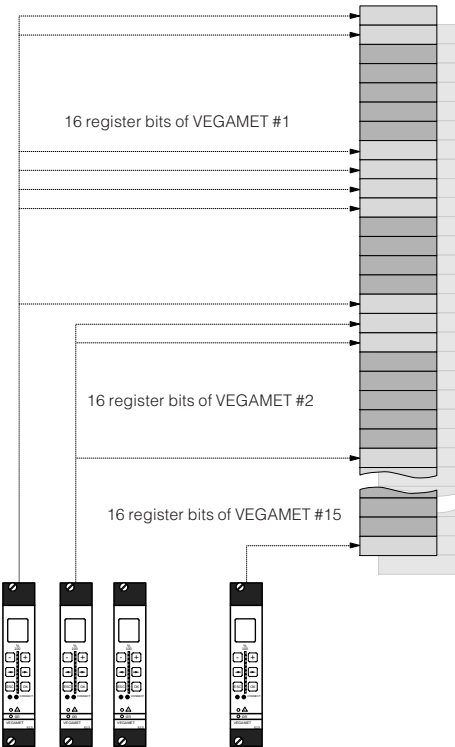


Image of the switching conditions in VEGACOM 557 on VEGAMET 513, 514, 515 or 614

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:

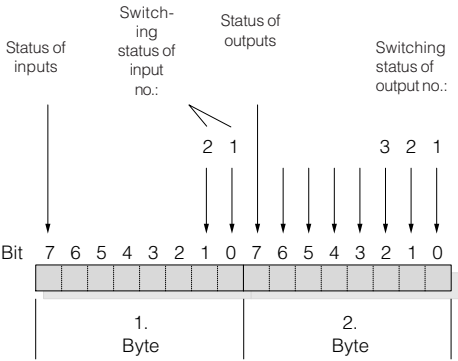
Register address in Modicon	Register address am Modbus	Register address in VEGACOM 557
00 001	00 000	000
10 017	10 016	016
04 001	04 000	000
14 017	14 016	016

Addressing of the switching conditions when connected to DISBUS

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	VEGAMET with DISBUS address = 2
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	VEGAMET with DISBUS address = 15
10016	15	Status: Outputs	
10017	16	Input contact 2	
10018	17	Input contact 1	VEGAMET with DISBUS address = 15
10019	18	reserved	
10238	237	reserved	VEGAMET with DISBUS address = 15
10239	238	reserved	
10240	239	Status: Outputs	

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

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



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

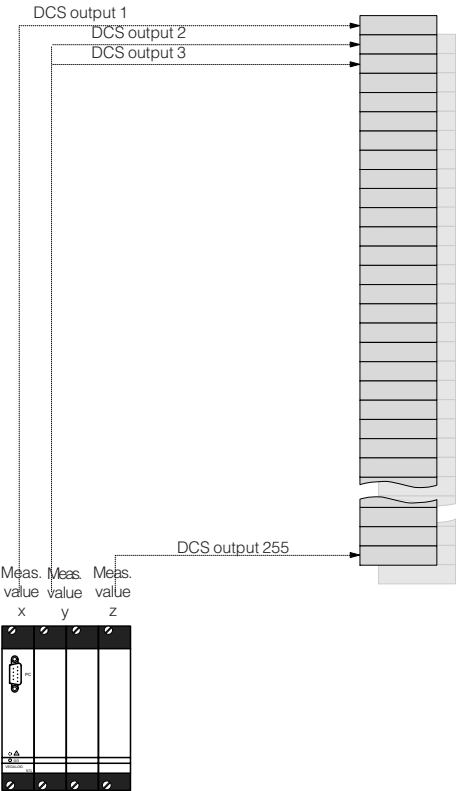
Status of outputs:
0 = all outputs OK
1 = output status not available (no outputs configured or VEGAMET not available)

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.

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.



Measured value image when connecting to VEGALOG 571

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.

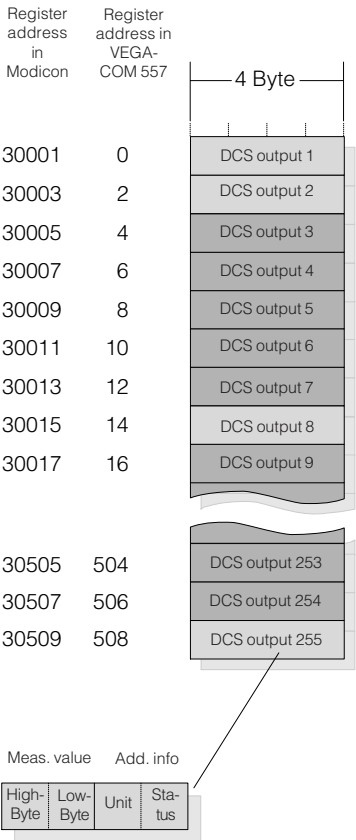
This results in the following conversion table:

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



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)

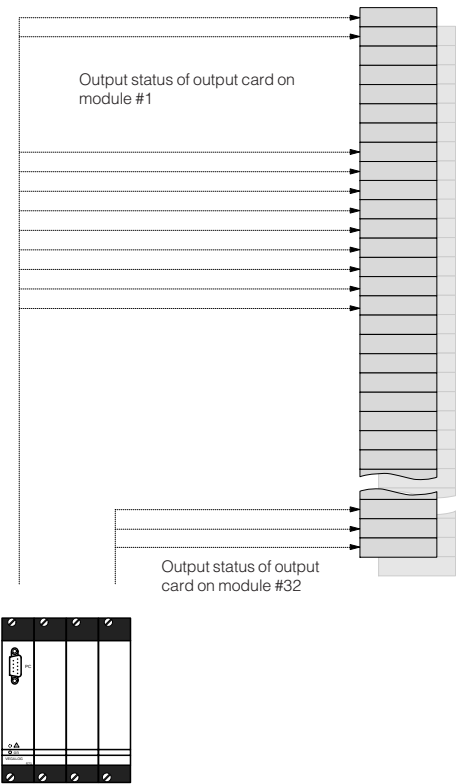


Image of switching status in VEGACOM 557 on VEGA-LOG 571

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

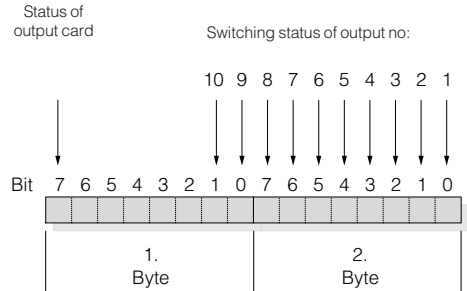


Addressing of the output status when connected to LOGBUS

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.

Register address in Modicon	Register address in VEGA-COM 557	1 BIT	
10001	0	Output 9	
10002	1	Output 10	
10003	2	reserved	
10004	3	reserved	
10005	4	reserved	
10006	5	reserved	
10007	6	reserved	
10008	7	Status: Card	Values of VEGALOG Card on module = 1
10009	8	Output 1	
10010	9	Output 2	
10011	10	Output 3	
10012	11	Output 4	
10013	12	Output 5	
10014	13	Output 6	
10015	14	Output 7	
10016	15	Output 8	
10017	16	Output 9	
10510	509	Output 6	Values of VEGALOG Card on module = 32
10511	510	Output 7	
10512	511	Output 8	

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	0xFFFF	valid measured value
0x01	0xFFFF	simulated meas. value (only on VEGAMET 509 and 512)
0x80	0xFFFF	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.

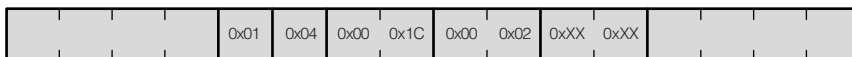
Example for data from VEGAMET 514:

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

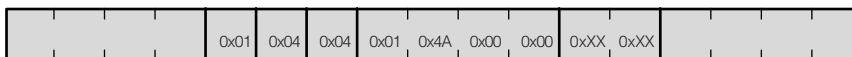
Meaning	Start	Slave address	Function code	Address of the 1. register word	Number of register words	Error Check	End
Number of Bytes	3 ... 4	1	1	2	2	2	3 ... 4
Value range	Closed level	1 .. 247	04	0 ... 65.509	1 ... 127	CRC	Closed level



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
		0x01	0x01	0x00 0x20	0x00 0x20	0xFF 0xFF	

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
		0x01	0x01	0x04	0x00 0x0F 0x00 0x0F	0xXX 0xXX	

Switching status to
AR card #4

Switching status to
AR card #3

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
		0x01	0x08	0x00 0x00	0xA5 0x37	0xFF 0xFF	

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
		0x01	0x08	0x00 0x00	0xA5 0x37	0xFF 0xFF	

RTU confirmation telegram diagnostic (function code 08)

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	CRLF

:	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	CRLF

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

DCS value 1 of
VEGAMET #2:
Status: 0x00
Unit: 0x00
Meas. value:
0x014A
= 3.30%

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	CR LF

:

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	CR LF

:

0

1

0

1

0

4

0

0

0

F

0

0

0

F

X

X

CR

LF

SCII answer telegram (function code 01)

Switching conditions to
AR card #4

Switching conditions to
AR card #3

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	CRLF

:	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

:	0	1	8	4	0	2	X	X	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 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
30.001	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 / Switching 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 / Switching 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 / Switching 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 / Switching 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 / Switching 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 / Switching 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 / Switching 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