Signal conditioning instruments and communication

Contents

<table>
<thead>
<tr>
<th>Application examples</th>
<th>232</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanations to cover graphics</td>
<td>233 ff.</td>
</tr>
<tr>
<td>Overview</td>
<td>235</td>
</tr>
<tr>
<td>Series 300</td>
<td>236</td>
</tr>
<tr>
<td>Series 500</td>
<td>237 ff.</td>
</tr>
<tr>
<td>Series 600</td>
<td>241 ff.</td>
</tr>
<tr>
<td>VEGALOG 571</td>
<td>247 ff.</td>
</tr>
<tr>
<td>Communication components</td>
<td>251 ff.</td>
</tr>
<tr>
<td>ACcessory</td>
<td>256 ff.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>262 ff.</td>
</tr>
</tbody>
</table>
Application example: Signal conditioning instruments and communication

**Level detection**

![Level detection diagram]

VEGATOR signal conditioning instruments power the connected sensor and trigger level-dependent switching signals via integrated relays.

For use with the following measuring principles:
- capacitive
- vibration
- conductive

**HART® multidrop remote enquiry**

![HART multidrop remote enquiry diagram]

Easy visualisation of up to 15 levels or pressure transmitters by using the HART® multidrop technology. Optional also via telephone connection (modem).

**Digital communication**

![Digital communication diagram]

Digital communication of VEGALOG 571 processing system or single signal conditioning instruments via e.g. Profibus DP, Interbus, Modbus, Ethernet TCP/IP etc. to connected computer systems.

Sensor connection is made with standard 4 … 20 mA technology or digitally via Profibus PA.

---

**Continuous level measurement**

![Continuous level measurement diagram]

VEGAMET signal conditioning instrument for continuous level measurement

VEGAMET signal conditioning instruments power the connected sensor and process the signals microcomputer controlled.

For use with the following measuring principles:
- capacitive (analogue)
- hydrostatic (analogue)
- ultrasonic (analogue)
- radar (analogue)
- process pressure (analogue)
- differential pressure (analogue)
Explanations to the cover graphics

21 VEGALOG processing system
The VEGALOG processing system unites several functions: Master for Profibus PA (no addressing necessary), processing of measured values, control, segment link and gateway.

22 VEGACOM 558
VEGACOM 558 is used for connection of VEGA signal conditioning instruments to Ethernet/TCP/IP. This enables an easy enquiry of measured values via HTML by standard browser technology or e-mail. Also with controls, Excel and the visualisation program Visual VEGA access is possible via Ethernet.

23 VEGACOM 557
VEGACOM 557 easily connects the field level with the system level. All standard bus systems are supported.

24 EP card
The input card for Profibus PA represents in conjunction with the CPU of VEGALOG a Profibus PA link. Particularly VEGA Profibus sensors in Ex or non-Ex areas can be powered. The communication with connected systems is also possible.

25 VEGAMET
Compact processing systems for various applications, e.g. level measurement, gauge measurement, process pressure measurement. Measurement with automatic correction. Main tasks are Ex separation, processing and power supply of the sensors.

26 HART®
Simultaneously 4 ... 20 mA and digital communication. On the basis of the Bell 202 communication standard, the digital signal is superimposed to the analogue signal.

27 Profibus DP
Fast bus system for up to 12 Mbit/s with RS485 transmission technology.

28 Profibus PA
Fieldbus systems for process automation. The standardised transmission technology acc. to IEC 61158-2 meets the requirements for intrinsic safety and bus power supply in two-wire technology.

29 Foundation Fieldbus
In the field level, the standardised transmission technology acc. to IEC 61158-2 specification is used. This enables digital communication, intrinsic safety and bus power supply in two-wire technology.

30 Field adjustment
With the VEGACONNECT interface adapter and the adjustment software VVO or PACTwareTM it is possible to adjust Profibus PA sensors locally.

31 Modem/Cellular phone
Visual VEGA can enquire measured values via modem over individual distances. It is therefore unimportant if the measured values are enquired via a standard modem or via a GSM modem. All connections are composed in a telephone list by which measured values are read in regularly via Visual VEGA.

32 Remote I/O (RI0)
For connection of conventional sensors or binary inputs and outputs. The signals are transmitted via a so-called gateway/head station via a two-wire bus to connected systems. The remote I/O ensures the power supply and Ex separation of the sensors with the appropriate input and output modules.

33 VEGASTAB 692MD
Power supply unit for up to 15 HART® sensors on one two-wire cable. The sensors are therefore operated in HART® multidrop mode (see also 34).

34 HART® multidrop
Bus-capable, digital communication on HART® basis for up to 15 HART® field instruments. The individual sensors consume only a basic supply current of 4 mA. The measuring signal is transmitted digitally.

35 Segment coupler/PA link
The adaptation of Profibus DP to the Profibus PA technology is made by transparent couplers or by non-transparent PA links. Main tasks are Ex separation, galvanic separation, power supply and signal adaptation (see also 24).
36 Linking Device FF/HSE
With a Linking Device, the slow FF H1 bus (IEC 61158-2) is connected to the High-Speed-Ethernet technology (HSE). Here, the adaptation to the transmission technology (HSE to IEC 61158-2) and the adaptation of the data transmission speed is made.

37 Repeater
A Fieldbus Signal Repeater improves the digital communication signals within the IEC 61158-2 (Profibus PA and Foundation Fieldbus) Fieldbus systems. This ensures the galvanic separation of the bus segments and provides also the power supply of the bus participants. Repeaters with intrinsically safe Fieldbus output are also available.

38 T-connectors (star distributor)
T-connectors enable the connection or exchange of field instruments with IEC 61158-2 physics, i.e. Profibus PA and Foundation Fieldbus, without interrupting the bus system.

39 Termination
With the fieldbus connection resistances, the IEC 61158-2 fieldbus (Profibus PA or Foundation Fieldbus) is connected at the end so that the signals are also available in good quality via longer distances.

40 Multi barrier/Field barrier
The power supply is made via an Exe-IEC fieldbus (Profibus PA or Foundation Fieldbus). The multi barrier provides 4 intrinsically safe supply circuits on the output side, to which appropriate Exia two-wire field instruments can be connected.

41 Profibus PA/NAMUR connection box
Easy binary NAMUR inputs such as e.g. VEGASWING 60 vibrating level switches can be connected to Profibus PA via the connection box. The connection box as well as the connected vibrating level switches are powered by the Profibus PA.

42 Gateway Profibus/AS interface
The connection or coupling of Profibus DP and AS interface is realised with a gateway. The gateway acts as Profibus-Slave as well as AS-Interface-Master.

43 AS-Interface
Actor Sensor Interface. Fieldbus system optimised for binary output and input signals. VEGASWING 60 vibrating level switches can be easily connected to the bus via AS interface connection boxes (see 44).
www.as-interface.de

44 AS interface connection box
Easy binary NAMUR or also transistor inputs such as e.g. with VEGASWING 60 vibrating level switches can be connected to the bus via the connection box. AS interface offers a power supply of the connection box as well as of the connected vibrating level switches via appropriate power supply units.

45 Screened two-wire cable
A two-wire cable is used as transmission medium, for further information see the appropriate setup guideline, of e.g. Profibus. It is recommended to use the stated reference cable.
## Level detection

<table>
<thead>
<tr>
<th>Type</th>
<th>VEGATOR</th>
<th>Sensors / Meas. principle</th>
<th>No. of sensors</th>
<th>Inputs</th>
<th>Level switch / Min./Max. control</th>
<th>Hysteresis</th>
<th>Outputs</th>
<th>Fail safe relay</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Level switch</td>
<td>Hysteresis</td>
<td>Level relay/Transistor</td>
<td>Approvals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>256C</td>
<td>Conductive</td>
<td>1</td>
<td>1 / –</td>
<td>fix</td>
<td>1 / –</td>
<td>– / –</td>
<td>–</td>
<td></td>
<td></td>
</tr>
<tr>
<td>521</td>
<td>Capacitive Hydrostatic</td>
<td>1</td>
<td>1 / –</td>
<td>fix</td>
<td>1 / 1</td>
<td>1 / 1</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>527</td>
<td>Capacitive Hydrostatic</td>
<td>2</td>
<td>2 or 1</td>
<td>fix (by sensor installation)</td>
<td>2 / 2</td>
<td>1 / 1</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>532</td>
<td>Conductive</td>
<td>2</td>
<td>2 or 2 (dependent on sensor type)</td>
<td>fix (by sensor installation)</td>
<td>2 / 2</td>
<td>– / –</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
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<tr>
<td>536</td>
<td>Vibration</td>
<td>1</td>
<td>1 / –</td>
<td>fix</td>
<td>1 / 1</td>
<td>1 / 1</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
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<tr>
<td>537</td>
<td>Vibration</td>
<td>2</td>
<td>2 or 1</td>
<td>fix</td>
<td>2 / 2</td>
<td>1 / 1</td>
<td>Ex ia, WHG</td>
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<td></td>
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<tr>
<td>620</td>
<td>Capacitive Hydrostatic</td>
<td>1</td>
<td>1 / –</td>
<td>fix</td>
<td>1 / 1</td>
<td>– / –</td>
<td>–</td>
<td></td>
<td></td>
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<td>Capacitive Hydrostatic</td>
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<td>1 / –</td>
<td>fix</td>
<td>1 / 1</td>
<td>– / –</td>
<td>Ex ia, WHG</td>
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<td></td>
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<td>622</td>
<td>Capacitive Hydrostatic</td>
<td>1</td>
<td>– / 1</td>
<td>adjustable</td>
<td>1 / 1</td>
<td>– / –</td>
<td>Ex ia, WHG</td>
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<td></td>
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<tr>
<td>631</td>
<td>Conductive</td>
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<td>1 or 1 (dependent on sensor type)</td>
<td>fix (by sensor installation)</td>
<td>1 / 1</td>
<td>– / –</td>
<td>Ex ia, WHG</td>
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<td></td>
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<tr>
<td>636</td>
<td>Vibration</td>
<td>1</td>
<td>1 / –</td>
<td>fix</td>
<td>1 / 1</td>
<td>– / –</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Continuous level measurement

<table>
<thead>
<tr>
<th>Type</th>
<th>VEGAMET</th>
<th>Sensors / Meas. principle</th>
<th>No. of sensors</th>
<th>Inputs</th>
<th>Level switch / Voltages</th>
<th>Hysteresis</th>
<th>Outputs</th>
<th>Fail safe relay</th>
<th>Approvals</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Current 0/4 … 20 mA / Voltage 0/2 … 10 V</td>
<td>Outputs DISBUS</td>
<td>Level relay / Transistor</td>
<td>Approvals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>307</td>
<td>Capacitive Hydrostatic</td>
<td>1 / –</td>
<td>1 / 1</td>
<td>–</td>
<td>– / –</td>
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<td></td>
</tr>
<tr>
<td>308</td>
<td>Capacitive Hydrostatic</td>
<td>1 / –</td>
<td>1 / 1</td>
<td>–</td>
<td>1 / –</td>
<td>–</td>
<td>–</td>
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<td></td>
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<tr>
<td>513</td>
<td>Capacitive Hydrostatic</td>
<td>1 / –</td>
<td>1 / 1</td>
<td>1</td>
<td>– / 1</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>1</td>
<td>2 / 1</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515</td>
<td>Capacitive Hydrostatic</td>
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<td>1</td>
<td>2 / 1</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>601</td>
<td>Capacitive Hydrostatic</td>
<td>1 / –</td>
<td>1 / 1</td>
<td>–</td>
<td>– / –</td>
<td>–</td>
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<td></td>
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<tr>
<td>602</td>
<td>Capacitive Hydrostatic</td>
<td>1 / –</td>
<td>1 / 1</td>
<td>–</td>
<td>– / 1</td>
<td>Ex ia, WHG</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>614</td>
<td>Capacitive Hydrostatic</td>
<td>1 / –</td>
<td>1 / 1</td>
<td>1</td>
<td>2 / 1</td>
<td>Ex ia, WHG</td>
<td></td>
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</tbody>
</table>

## Auxiliary level switches

<table>
<thead>
<tr>
<th>Type</th>
<th>VEGASEL</th>
<th>Current switch values</th>
<th>Level switches</th>
<th>Hysteresis</th>
<th>Outputs Relay</th>
<th>Transistor</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0/4 … 20 mA / Voltage 0/2 … 10 V</td>
<td>Min./Max. control</td>
<td>adjustable</td>
<td>1</td>
<td>1</td>
<td>WHG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>VEGASEL</th>
<th>Current switch values</th>
<th>Level switches</th>
<th>Hysteresis</th>
<th>Outputs Relay</th>
<th>Transistor</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>643</td>
<td></td>
<td>1</td>
<td>adjustable</td>
<td>1</td>
<td>1</td>
<td>WHG</td>
<td></td>
</tr>
</tbody>
</table>
**VEGAMET 307**  
**Single signal conditioning instrument and indication for continuous measurement**  
Signal conditioning instrument and power supply unit for 4...20 mA sensors  
- adjustment via spindle potentiometer  
- mounting on carrier rail 35 x 7.5 acc. to EN 50022  
- alternatively fastening as panel mounting (96 x 96 mm)

Sensor input : 1 x (capacitive electrode, pressure transmitter)  
Current output : 1 x 0/4...20 mA  
Voltage output : 1 x 0...10 V  
Protection : IP40  
Operating voltage : 20...250V AC, 20...72V DC

**Accessory**  
X without  
K with lockable transparent cover  
G mounted in ISO-housing IP 65

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**VEGAMET 308**  
**Single signal conditioning instrument and indication for continuous measurement**  
Signal conditioning instrument and power supply unit for 4...20 mA sensors  
- additional level switch  
- adjustment via spindle potentiometer  
- fastening on carrier rail 35 x 7.5 acc. to EN 50022  
- alternatively fastening as panel mounting (96 x 96 mm)

Sensor input : 1 x (capacitive electrode, pressure transmitter)  
Current output : 1 x 0/4...20 mA  
Voltage output : 1 x 0...10 V  
Relay output : 1 x spdt  
Protection : IP40  
Operating voltage : 20...250V AC, 20...72V DC

**Accessory**  
X without  
K with lockable transparent cover  
G mounted in ISO-housing IP 65
VEGATOR 521
Single signal conditioning instrument for level signalling in 19”
European size
For processing of levels with continuously measuring systems
- with adjustable integration time
- fault monitoring and fault signal
- with fixed adjusted switching hysteresis

Sensor input : 1 x (capacitive electrode or pressure transmitter)
Relay output : 1 x spdt
Transistor output : 1 x
Fault signal : 1 x fail safe relay and 1 x transistor
Protection : IP30
Operating voltage : 20...53V AC, 20...72V DC

Approval
\[X\] without
EX0.A ATEX II (1) GD [EEx ia] IIC/IIB + WHG
.M Ship approval GL, LR, ABS

TOR521
- Module for mounting into carrier see page 257
- Housing for single mounting see page 258

VEGATOR 527
Single signal conditioning instrument for level signalling in 19”
European size
For processing of levels with continuously measuring systems
- with adjustable integration time
- fault monitoring and fault signal

Sensor input : 2 x (capacitive electrodes, pressure transmitters)
Relay output : 2 x spdt
Transistor output : 2 x (with fixed switching hysteresis)
Fault signal : 1 fail safe relay and transistor
Protection : IP30
Operating voltage : 20...53V AC, 20...72V DC

Approval
\[X\] without
EX0.A ATEX II (1) GD [EEx ia] IIC/IIB + WHG
.M Ship approval GL, LR, ABS

TOR527
- Module for mounting into carrier see page 257
- Housing for single mounting see page 258

VEGATOR 536, 537 (see chapter "Vibration")
VEGATOR 256C, 532 (see chapter "Conductive")
VEGAMET 513

Single signal conditioning instrument for continuous measurement in 19” European size

Signal conditioning instrument and power supply unit for 4...20 mA sensors

- adaption to the application by easy selection of the appropriate functions (applications)
- processing of measured values with adjustable integration time, adjustment function, linearisation for individual vessel geometries, individually selectable scaling, allocation of measuring units
- digital output for connection to the control room and for wiring of up to 15 signal conditioning instruments
- fault monitoring (short-circuit/interruption on the input, instrument error)

Sensor input : 4...20 mA with transmitter supply
Current output : 1 x 0/4...20 mA
Voltage output : 1 x 0/2...10 V
Relay output : 1 x for fault signal
Digital output : 1 x
Operating voltage : 20...53V AC, 20...72V DC

Approval
  .X without
  EX0.A ATEX II (1) GD [EEx ia] IIC + WHG
  .M Ship approval GL, LR

Language of the menu
  01 German
  02 English
  03 French
  04 Dutch
  05 Italian

MET513

- Module for mounting into carrier see page 257
- Housing for single mounting see page 258
VEGAMET 514

Single signal conditioning instrument for continuous measurement
in 19" European size

Signal conditioning instrument and power supply unit for 4...20 mA sensors

- integrated adjustment and indicating module
- adjustment also via PC with VVO
- adaption to the application by easy selection of the appropriate functions (applications)
- processing of measured values with adjustable integration time, adjustment function, linearisation for individual vessel geometries, individually selectable scaling, allocation of measuring units
- digital output for connection to the control room and for wiring of up to 15 signal conditioning instruments
- fault monitoring (short-circuit/interruption on the input, instrument error)

Sensor input : 4...20 mA with transmitter supply
         : 1 correction signal input (e.g. zero point or density correction)
Current output : 1 x 0/4...20 mA
Voltage output : 1 x 0/2...10 V
Relay output : 2 x spdt; 1 x for fault signal
Digital output : 1 x
Operating voltage : 20...53V AC, 20...72V DC

SPEED

MET 514 standard version
MET 514N as MET514, but without indicating/adj. module
MET 514D for flow a. volume measurement (pulse outputs)

Approval
.X without
EX0.A ATEX II (1) GD [EEx ia] IIC + WHG
.M Ship approval GL,LR

Language of the menu
01 German
02 English
03 French
04 Dutch
05 Italian

MET514

- Module for mounting into carrier see page 257
- Housing for single mounting see page 258
VEGAMET 515

Single signal conditioning instrument for continuous measurement in 19" European size

Signal conditioning instrument and power supply unit for analogue sensors in the range of 4...20 mA

- integrated adjustment and indicating module
- adjustment via PC with VVO
- adaption to the application by easy selection of the appropriate functions (applications)
- processing of measured values with adjustable integration time, adjustment function, linearity for individual vessel geometries, individually selectable scaling, allocation of measuring units
- digital output for connection to the control room and for wiring of up to 15 signal conditioning instruments
- fault monitoring (short-circuit/interruption on the input, instrument error)

Sensor input: 2 x 4...20 mA, transmitter power supply
: 2 x correction signal input (e.g. zero point or density correction)

Current output: 3 x 0/4...20 mA
Voltage output: 3 x 0/2...10 V
Relay output: 2 x spdt; 1 x for fault signal
Digital output: 1 x
Operating voltage: 20...53V AC, 20...72V DC

MET515 standard version
MET515N as MET515 but without indicating/adj. module

Approval
\( .X \) without
\( .M \) ATEX II (1) GD [EEx ia] IIIC + WHG
Ship approval GL, LR

Configuration
A Two independent level measurements
B Level measurement in pressurized vessels
C Gauge difference measurement
D Level measurement with variable density

Language of the menu
01 German
02 English
03 French
04 Dutch
05 Italian

MET515

Module for mounting into carrier see page 257
Housing for single mounting see page 258
### VEGATOR 620
**Single signal conditioning instrument for level signalling**
For processing of levels with continuously measuring systems

- adjustable integration time
- mounting on carrier rail 35 x 7.5 acc. to EN 50022
- indication of the switching condition via LED

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor input</td>
<td>1 x (capacitive electrode, pressure transmitter)</td>
</tr>
<tr>
<td>Relay output</td>
<td>1 x spdt (with fixed switching hysteresis)</td>
</tr>
<tr>
<td>Protection</td>
<td>IP30</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>20...250V AC, 20...72V DC</td>
</tr>
</tbody>
</table>

### VEGATOR 621
**Single signal conditioning instrument for level signalling**
For processing of levels with continuously measuring systems

- adjustable integration time
- mounting on carrier rail 35 x 7.5 acc. to EN 50022
- fault monitoring and fault signal via LED

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor input</td>
<td>1 x (capacitive electrode, pressure transmitter)</td>
</tr>
<tr>
<td>Relay output</td>
<td>1 x spdt</td>
</tr>
<tr>
<td>Transistor output</td>
<td>1 x</td>
</tr>
<tr>
<td>Protection</td>
<td>IP30</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>20...250V AC, 20...72V DC</td>
</tr>
</tbody>
</table>

**Approval**
- EX0.A ATEX II (1) GD [EEx ia] IIC + WHG
- M Ship approval

**Plug-in socket**
- TOR620.X inclusive socket
- TOR621 inclusive socket
VEGATOR 622

Single signal conditioning instrument for level signalling
For processing of levels with continuously measuring systems

- adjustable integration time
- adjustable switching hysteresis
- fault monitoring and fault signal via LED
- mounting on carrier rail 35 x 7.5 acc. to EN 50022

Sensor input : 1 x (capacitive electrode, pressure transmitter)
Relay output : 1 x spdt
Transistor output : 1 x
Protection : IP30
Operating voltage : 20...250V AC, 20...72V DC

Approval
X without
EX0.A ATEX II (1) GD [EEx ia] IIC + WHG
.M Ship approval
Plug-in socket
K inclusive socket
TOR622
VEGAMET 601
Single signal conditioning instrument for continuous measurement
Signal conditioning instrument and power supply unit for
4...20 mA sensors

- adjustable integration time
- adjustment via spindle potentiometer
- fastening on carrier rail 35 x 7.5 acc. to EN 50022

Sensor input : 1 x (capacitive electrode, pressure transmitter)
Current output : 1 x 0/4...20 mA
Voltage output : 1 x 0...10 V
Protection : IP30
Operating voltage : 20...250V AC, 20...72V DC

VEGAMET 602
Single signal conditioning instrument for continuous measurement
Signal conditioning instrument and power supply unit for
analogue sensors in the range of 4...20 mA

- adjustable integration time
- fault monitoring and fail safe relay
- adjustment via spindle potentiometer
- fastening on carrier rail 35 x 7.5 acc. to EN 50022

Sensor input : 1 x (capacitive electrode, pressure transmitter)
Current output : 1 x 0/4...20 mA
Voltage output : 1 x 0...10 V
Relay output : 1 x fault signal
Protection : IP30
Operating voltage : 20...250V AC, 20...72V DC
VEGAMET 614

Single signal conditioning instrument for continuous measurement with integrated level switches
Signal conditioning instrument and power supply unit for 4...20 mA sensors

- can be configured for manifold applications
- processing of measured values with adjustable integration time, adjustment function, linearisation for individual vessel geometries, individually selectable scaling, allocation of measuring units
- fault monitoring (short-circuit/interruption on the input, instrument error)
- Fastening on carrier rail 35 x 7.5 acc. to EN 50022

Sensor input : 4...20 mA with transmitter power supply
Current output : 1 x 0/4...20 mA
Voltage output : 1 x 0/2...10 V
Relay output : 2 x spdt; 1 x fault signal
Digital output : wiring and connection to control room
Operating voltage : 20...250V AC, 20...72V DC

Approval
- X without EX0.A ATEX II (1) GD [EEx ia] IIC + WHG
- M Ship approval GL,LR ABS

Language of the menu
01 German
02 English
03 French
04 Dutch
05 Italian

MET614
VEGASEL 643
Auxiliary level switch and signal conditioning instrument for carrier rail mounting
Suitable if an auxiliary level switch is required

- 1-channel
- with adjustable switching hysteresis
- mounting on carrier rail 35 x 7.5 acc. to EN 50022

Current input : 1 x 0/4...20 mA
Voltage input : 1 x 0/2...10 V
Relay output : 1 x spdt
Transistor output : 1 x
Protection : IP30
Operating voltage : 20...250V AC, 20...72V DC
VEGASTAB 690

Power supply unit for supply of 2 analogue sensors
Independent supply of 2 x 4...20 mA sensors

- Fastening on carrier rail 35 x 7.5 acc. to EN 50022
- Output : 2 x 24V DC (floating) short-circuit proof (current limitation 26 mA)
- Protection : IP30
- Operating voltage : 20...250V AC, 20...72V DC

VEGASTAB 692 MD

Power supply unit for HART® sensors

- enables in conjunction with the visualisation program Visual VEGA (VV) and modem the remote enquiry of measured values
- for mounting on carrier rail 35 x 7.5 acc. to EN 50022
- inclusive plug-in socket
- inclusive VEGACONNECT 3

- Input : up to 15 HART® sensors in multidrop mode
- Output : RS 232 interface for data acquisition by means of Visual VEGA and for adjustment via VVO
- Protection class : IP30
- Operating voltage : 20...250V AC, 20...72V DC
**VEGALOG 571**

**System configuration**

VEGALOG 571 is a central processing system with modular construction. It consists of a carrier with integrated bus board for communication and automatic module determination, a CPU card and various input and output cards.

The cards are designed as module cards in European size (DIN 41 494) with 5 TE width and can be composed individually according to the requirements. The cards require a supply voltage of 24 V DC. The supply voltage can be provided e.g. by the power supply unit VEGASTAB 593.

The max. configuration comprises 2 completely equipped carriers connected via LOGBUS connection cable. Hence 32 modules are available, whereby up to 31 peripheral cards can be connected.

**Central unit**

The central unit (CPU card) takes over the complete digital communication (LOGBUS) among the individual cards. It is responsible for all calculating tasks, e.g. scaling, linearisation, differential generation with a differential measurement etc.

**Adjustment**

The setup and adjustment of the system is made via the RS 232C interface of the CPU and a standard PC in conjunction with the menu-driven adjustment program "VEGA Visual Operating" (VVO).

**Visualisation**

The visualisation program "Visual VEGA" is available for graphic and tabular presentation of the measured values. Data of all measurement loops can be transmitted via the RS 232 interface to the PC, displayed and saved there.

**Digital connection**

With the interface converters VEGACOM 557 (e.g. Profibus DP) and VEGACOM 558 (Ethernet), VEGALOG 571 can be connected digitally via standard bus systems/standard protocols to connected systems (DCS, PLC or PC). The measured values, diagnosis information can be enquired there and certain parameter modifications can be carried out.
VEGALOG 571 CPU
Central unit for VEGALOG 571 processing system
Measuring data processing, card management, arithmetic functions

- adjustment via PC with VVO
- special arithmetic functions for several inputs
- adaption to the application by simply selecting respective functions (applications)
- measured value processing with adjustable integration time, adjustment function, linearisation for individual vessel geometries, individually selectable scaling, allocation of measuring units

Operating voltage : 18...36 V DC

VEGALOG 571 EA-card
Input card for 4...20 mA sensors
Transmitter power supply and current signal processing for up to 10 sensors

- for connection of max. 10 sensors with analogue signal transmission
- with transmitter power supply (active) in the range of 4...20 mA
- without transmitter power supply (passive) in the range of 0...20 mA
- active or passive also mixed

Operating voltage : 18...36 V DC
VEGALOG 571 EP card

Input card Profibus PA for VEGALOG 571
Takes over the power supply, data communication and the address management of the connected Profibus PA sensors

- Ex version acc. to FISCO model
- automatic addressing

Operating voltage : 18...36 V DC
Input Profibus PA : max. 15 sensors with non-Ex, max. 10 sensors with Ex

VEGALOG 571 AA-card

Output card with current outputs of 0...20 mA
For connection of actuators or indications

- connection of up to 10 field instruments

Operating voltage : 18...36 V DC
Outputs : 10 x 0...20 mA
Load : max. 750 Ohm

Approval
XX without
XM Ship approval GL, LR
XA Overfill protection acc. to WHG

LOG571EP

Suitable module see page 257.
VEGALOG 571 AR-card
Relay output card
To output levels, sum or single failure messages

- for connection of binary input cards such as e.g. of PLC systems
- indication of the switching status of the individual relay outputs
- multiple allocation per input of the relays possible
- configuration of the relays and indication of the switching condition via software

Operating voltage : 18...36 V DC
Outputs : 10 relays

Approval
XX without
XM Ship approval GL,LR
XA Overfill protection acc. to WHG

LOG571AR.

VEGALOG 571 AT-card
Transistor output card
To output levels, sum or single failure messages

- for connection of binary input cards such as e.g. of PLC systems
- indication of the switching status of individual transistor outputs
- multiple allocation per input of the transistor outputs possible
- configuration of the relays and indication of the switching status via software

Operating voltage : 18...36 V DC
Outputs : 10 transistor outputs (short-circuit proof)

Approval
XX without
XM Ship approval GL,LR
XA Overfill protection acc. to WHG

LOG571AT.
VEGACOM 557
Gateway/interface converter in 19" European size
Connection of VEGA systems to PLC, PC and process control systems via standard bus systems
- the measuring data are summarized centrally and are provided depending on the selected protocol version
- in addition, VEGACOM 557 provides an RS 232-interface for the adjustment software VEGA Visual Operating (VVO) and the visualisation software Visual VEGA (VV)
- remote enquiry with modem via the telephone network on the RS 232C interface

Meas. data input : for VEGALOG 571 and VEGAMET
Interfaces : RS 485, RS 422, RS 232, TTY (depending on the communication protocol)
Operating voltage : 20...53V AC, 20...72V DC

Approval
.X without
.M Ship approval GL

Protocol
A Siemens S5 (3964/3964R procedure with RK512)
B Modbus (RTU/ASCII)
I Interbus S
P Profibus DP
S Profibus FMS
N VEGA-ASCII
X without Fieldbus protocol

COM557
VEGACOM 558

Interface converter/Gateway in 19" European size
For connection of the VEGA processing systems to Ethernet TCP/IP

- visualisation and archive via Ethernet TCP/IP with the program Visual VEGA (VV)
- processing of measured values in HTML format for the standard browser
- transmission of the measured values to PLC/DCS via MODBUS TCP/IP
- transmission of the measured values in an e-mail
- remote enquiry with modem via the telephone network on the RS 232C interface

Meas. data input : for VEGALOG 571 and VEGAMET
Interfaces : RJ45 with 10/100 Mbit/s
: RS 232
Operating voltage : 20...53V AC; 20...72V DC

RS 232 connection cable
Connection cable between PC and VEGALOG 571 - CPU or VEGACOM 557/558
9-pole socket - socket
Length: 2 m

USB/RS 232 adapter cable
Special adapter cable for connection of a VEGACONNECT to the USB interface of a PC or notebook

Cable: length 0.35 m
Operating system: Windows 95/98/2000/XP
RS 232 plug: SUB-D-B-9 pole plug (Male)
USB plug: type A

VEGACONNECT 3 (see chapter "Indication and adjustment")
Modem cable
Special cable for connection of modem and VEGACONNECT 3
For direct connection of sensors and single signal conditioning instruments without RS 232 interface to the telephone network

- remote parameter adjustment with the adjustment software VVO
- remote measured value enquiry with the visualisation software VV

Cable : length 1.8 m with 2 x SUB-D-9-pole plug
Add. adapter : 1 x 9 to 25-pole

MODEM.KX

Analogue modem
For remote enquiry of measured values and remote parameter adjustment of communication-capable VEGA instruments with VV or VVO
Approval for Germany

MODEM.SX

Cellular phone
for GSM 900 MHz mobile phone network
For wireless remote enquiry of measured values and remote parameter adjustment of communication-capable VEGA instruments with VV or VVO
Approval for Europe

Requirements : card agreement with released data transmission and deactivated pin
Consisting of : cellular phone, power supply unit, antenna, RS 232 connection cable (article no. 2.25181)

MODEM.FX

ISDN-Terminal-Adapter
For connection of analogue modems to the Euro-ISDN network (S0 bus).
Approval for Germany

MODEM.IX
**Profibus DP/PA segment coupler**

**Coupling of a Profibus PA segment to Profibus DP**

For power supply and coupling of Profibus PA

- up to 10 Ex or 32 non-Ex field instruments can be connected to the PA segment
- power supply of the Profibus PA segment
- transparent and master-independent and therefore no own addressing
- for Ex field instruments acc. to the FISCO model
- fastening on carrier rail 35 x 7.5 mm acc. to EN 50022 or wall mounting

- Operating voltage Ex/non-Ex: 20...35V DC/20...30V DC
- Current consumption Ex/non-Ex: 350...20 mA/680...460 mA
- Housing width Ex/non-Ex: 100 mm/80 mm
- Profibus DP (RS 485): 93.75 kbit/s (fixed adjusted baud rate)
- Profibus PA (IEC 61158): 31.25 kbit/s (fixed adjusted baud rate)
- Nominal output Profibus PA Ex/non-Ex: 13V, 100 mA/24V, 400 mA
- Connection resistance Profibus PA: fixed integrated on one side
- Connection resistance Profibus DP: connectable

- Approval
  - X without EX.X
  - EEx ia IIC

**PA-KOPPLER**

- Please ask for the segment coupler with 12 Mbit/s
PC and Laptop module cards
For connection of VVO with Profieldus DP and Profieldus PA via segment coupler
Suitable for all Profieldus PA transmitters

PROFICARD:
- Profieldus PCM CIA interface for Laptop .................. article no. 2.24655.....

PROFIBOARD:
- Profieldus PCI interface for PC ................................ article no. 2.24656.....

PROFIBOARD:
- Profieldus ISA interface for PC ............................. article no. 2.24657.....

Profibus PA T-connector
For coupling of Profieldus PA transmitters to the Profieldus PA cable.
Terminal box in EEEx ia version with Aluminimum housing in protection IP 66
and cable entry 3 x Pg 9.
With terminal board and coupling option for terminator (please order separately).
For standard and EEEx ia applications.

Profibus PA T-connector ................................. article no. 2.25061.....

Terminator .................................................. article no. 2.25062.....

4-fold star distribution ....................................... article no. 2.27371.....

2-fold star distribution ....................................... article no. 2.27372.....
Housing IP 65 for series 300
Isolation protection housing with transparent cover for surface mounting
For one series 300 instrument
- inclusive carrier rail 35 x 7.5 acc. to EN 50022
Protection : IP65

ISO-GEH300.

Housing for housing type 505
Isolation protection housings with transparent cover for surface mounting
For max. 5 housings type 505
- inclusive carrier rail 35 x 15 acc. to EN 50022
Protection : IP65

ISO-GEH500.

BGT 596
19" carrier for series 500 instruments
For mounting into 19" cabinets and housings
- inclusive 4 TE blind cover
Width : 84 TE
Height : 3 HE

Approval
without EX.M Ex- as well as ship approval

BGT596
Module (33-pole)
for mounting into carrier BGT 596
suitable for series 500 instruments

- 1 multipoint connector DIN 41 612, series F, 33-pole (d, b, z) with coded pin
- 2 screws, 2 guide rails

Connection
A. Wire-Wrap standard connection 1,0mm x 1,0mm
B. Plug connection 2,8mm x 0,8mm
C. Termi-Point connection 1,6mm x 0,8mm
D. Soldering connection
E. Screw terminals 0,5mm²

Module Ex (33-pole)
for mounting into carrier BGT 596
suitable for series 500 Ex instruments

- 1 multipoint connector DIN 41 612, series F, 33-pole (d, b, z) with coded pin
- 2 screws, 2 guide rails and 1 separating chamber

Connection
A. Wire-Wrap standard connection 1,0mm x 1,0mm
B. Plug connection 2,8mm x 0,8mm
C. Termi-Point connection 1,6mm x 0,8mm
D. Soldering connection
E. Screw terminals 0,5mm²

Blind cover
Blind cover with screws for 19" carrier
Width: 5 TE

Blind cover
18762 5 TE (=25,4mm)
**Housing type 505**

**Plastic housing for single mounting of series 500 instruments**
For carrier rail or surface mounting of 19" European cards

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Series 500 with width 5 TE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>33-pole plug-in socket</td>
</tr>
<tr>
<td>Fastening</td>
<td>Surface mounting on carrier rail</td>
</tr>
<tr>
<td>Protection</td>
<td>IP20</td>
</tr>
</tbody>
</table>

**Power supply unit**

<table>
<thead>
<tr>
<th>Letter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Without</td>
</tr>
<tr>
<td>A</td>
<td>With power supply unit for supply voltage 90...250VAC</td>
</tr>
</tbody>
</table>

**Approval**

<table>
<thead>
<tr>
<th>Letter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.X</td>
<td>Without</td>
</tr>
<tr>
<td>.M</td>
<td>Ship approval</td>
</tr>
</tbody>
</table>

**GEH505**
VEGASTAB 593-60
Power supply unit in 19” European size
Voltage supply for series 500 instruments

Module (inclusive) : plug 6.3 mm
: multiple plug series H, 15-pole
Output : 24V DC, 45 W

VTGASTAB 593
Power supply unit in 19” European size
Voltage supply for series 500 instruments

Module (inclusive) : plug 6.3 mm
: multiple plug series H, 15-pole
Output : 24V DC, 120 W
Housing IP 65 for series 600
Isolation protection housing with transparent cover for surface mounting
For max. 3 series 600 instruments with 36 mm width or 1 instrument with 72 mm width
- inclusive carrier rail 35 x 7.5 acc. to EN 50022
Protection: IP65

ISO-GEH600
VEGALOG 571 BGT
19" carrier for the VEGALOG 571 processing system
For mounting into 19" cabinets and housings
- integrated bus board (LOGBUS) for max. 16 VEGALOG 571 cards
- 2 carriers connectable with LOGBUS connection cable
- inclusive 4 TE blind cover

Width : 84 TE
Height : 3 HE

LOG571BT.

VEGALOG 571 module
Module for mounting into carrier BGT LOG 571
Suitable for all VEGALOG cards as well as VEGACOM 557/558.
Not VEGALOG 571EP EX card.

Scope of delivery:
1 multipoint connector DIN 41 612, series F
48-pole (d, b, z) with coded pin
2 screws
2 guide rails

Connection
A. Wire-Wrap standard connection 1,0mm x 1,0mm
B. Plug connection 2,8mm x 0,8mm
C. Terri-Point connection 1,8mm x 0,8mm
D. Soldering connection
E. Screw terminals 0,5mm²

STECKPLATZ-48

• Blind covers with fixing screws see page 257
• Note: Ex module for VEGALOG 571 EP-Ex card see page 257

19" plug-in ventilator SK 3141
for mounting in 19" cabinets and housings
consisting of 3 ventilators in Aluminium cassette
Width: 84 TE
Heigh: 1 HE
Air output per ventilator: 160 m³/h
Rotary frequency: 2650/3100 min⁻¹
Noise level: 46 dB (A)
Max. static pressure: 78.5 Pa
Operating voltage: 220 V AC (50 Hz), 230 V AC (60 Hz), 54 W

19" plug-in ventilator SK 3141 article no. 2.21435
Series 300

Surface mounting

Front panel mounting

Transparent cover

Adapter plate for mounting on 35 x 7.5 or 35 x 15 acc. to EN 50 022

Holes ø 4.5 or thread M4

Iso housing IP 65 for series 300

Transparent cover

Dimensions
Signal conditioning instruments • Series 500
Dimensions

Series 500

Carrier BGT 596, BGT 596 Ex, BGT LOG 571

Housing type 505

• For series 500 signal conditioning instruments with 33-pole multiple plug
Iso housing IP 65 for housing type 505
Series 600

Carrier rail 35 x 7.5 or 35 x 15 acc. to EN 50 022

Width 36 mm: VEGATOR 620, 621, 622, VEGAMET 601, 602, VEGASEL 643, VEGASTAB 690
Width 72 mm: VEGAMET 614, VEGASTAB 692MD

Iso housing IP 65 for series 600