Signal conditioning instruments for level switches

Vibration

VEGATOR 536
VEGATOR 537
VEGATOR 636
NAMUR separator

Product Information

VEGA

Content

Take note of safety instructions for Ex applications

Please note the Ex specific safety information that you can find on our homepage www.vega.com\services\downloads and that is also delivered with every instrument with Ex approval. In hazardous areas you should take note of the appropriate regulations, conformity and type approval certificates of the sensors and power supply units. Each VEGATOR with Ex approval is an appropriate intrinsically safe instrument and must not be installed in hazardous areas.

34160-EN-080603

1 Product description

VEGATOR

VEGATOR signal conditioning instruments power the connected sensor and output level-dependent switching signals via integrated relay outputs.

VEGATOR 536, 537 and 636 signal conditioning instruments are suitable for level detection in conjunction with vibrating level switches.

The sensor detects e.g. if a certain level in a vessel is reached and passes the information on to the VEGATOR signal conditioning instrument for further processing. The measuring system can be checked for correct function by means of a test switch.

NAMUR amplifier

Switch amplifiers transmit digital signals from the hazardous areas. For this purpose, use only sensors according to DIN EN 60947-5-6 (NAMUR) such as e.g. vibrating level switches with NAMUR interface.

The intrinsically safe input is reliably separated from the output and mains according to DIN EN 50020. The relay output is reliably separated from mains according to IEC 66140.

Area of application

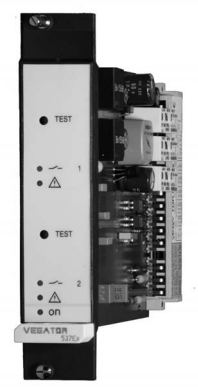
The instruments are mainly used for level detection or pump control.

The different signal conditioning instruments have various mounting options.

- Carrier rail mounting - VEGATOR 636, NAMUR switch amplifier
- Wall mounting - VEGATOR 636, NAMUR switch amplifier
- 19"-carrier - VEGATOR 536, 537
- Single housing (type 505) - VEGATOR 536, 537

34160-EN-080603

2 Type overview

	VEGATOR 536	VEGATOR 537
		
Applications:	Single level detection	Double level detection, double pump control
Functions:	Adjustment	Adjustment
Sensor input:	1 sensor input	2 sensor inputs
Outputs:	1 relay output, 1 transistor output	2 relay outputs, 2 transistor outputs
Indication on the instrument:	1 control lamp for indication of the relay condition, 1 fault signal lamp	2 control lamps for indication of the relay conditions, 2 fault signal lamps

	VEGATOR 636	NAMUR amplifier
		
Applications:	Single level detection	Single/double level detection
Functions:	Adjustment	-
Sensor input:	1 sensor input	2 sensor inputs
Outputs:	1 relay output 1 transistor output	1 relay output per sensor input
Indication on the instrument:	Control lamp for indication of the relay status. Fault control lamp	Control lamp for indication of the relay status. Fault control lamp

34160-EN-080603

3 Mounting instructions

3.1 VEGATOR 536, 537

Series 500 signal conditioning instruments offer the following installation and mounting options:

- Mounting in single housing type 505 Ex
- Mounting in carrier rail BGT596 (Ex)

Mounting in single housing type 505 Ex

The socket of the single housing type 505 Ex can either be screwed directly to the mounting plate or plugged onto a carrier rail 35 x 7.5 according to EN 50022 or TS32 according to EN 50035.

You can find further information on mounting in the operating instructions manual of the single housing type 505 Ex.

VEGATOR series 500 sensors in Ex version are auxiliary, intrinsically safe instruments and must not be installed in hazardous areas.

Mounting in carrier rail BGT596 (Ex)

Mount the respective module (standard or Ex version) on your carrier BGT596 or BGT596 Ex.

The female multipoint connector is available in the following connection versions:

- Wire-Wrap standard connection 1 x 1 mm
- Plug connection 2,8 x 0.8 mm
- Termi-Point standard connection 1,6 x 0.8 mm
- Soldering connection
- Screw terminals 2 x 0.5 mm^2

You can find further information on mounting in the operating instructions manual of the carrier.

When you are mounting the signal conditioning instrument with Ex approval in a carrier, you have to use a VEGA Ex module.
In Ex applications, a protection of IP 20 must be maintained. Cover the gaps or free modules from the front with appropriate blind covers.
Keep a distance of at least 2 TE (10 mm/0.4 in) from the module cards of other manufacturers.
If you want to mount a VEGATOR of series 500 in the complete left position in the carrier, you have to mount a blind cover with at least 4 TE (20 mm/0.8 in) in front of the module of the signal conditioning instrument.

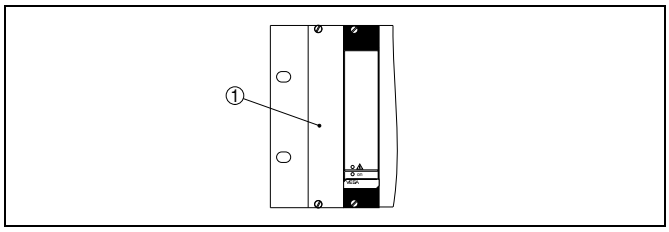


Fig. 1: Distance to the carrier side

1 Blind cover

Instrument coding

All series 500 signal conditioning instruments are provided with different gaps depending on type and version (mechanical coding).

The module is provided with coded pins that can be inserted to prevent accidental interchanging of the various instrument types.

3.2 VEGATOR 636

Installation location

Each series 600 VEGATOR consists of the actual signal conditioning instrument as well as a plug-in socket for carrier rail mounting. Because it has protection class IP 30 or IP 20, the instrument is intended to be used in switching cabinets.

VEGATOR 636 in Ex version is an auxiliary, intrinsically safe instrument and must not be installed in hazardous areas.

The Ex separating chamber must be plugged in before starting with the setup of the Ex versions of VEGATOR 636. The instrument must not be opened.

Mounting

The plug-in socket is constructed for carrier rail mounting according to EN 50022. Power supply is connected to terminals 17 and 18. For neighbouring series 600 signal conditioning instruments, it is possible to continue connection L1 and N directly via the supplied bridges.

Instrument coding

All series 600 signal conditioning instruments are provided with different gaps depending on type and version (mechanical coding).

The plug-in socket is provided with coded pins that can be inserted to prevent accidental interchanging of the various instrument types.

34160-EN-080603

4 Connecting to power supply

4.1 Preparing the connection

Note safety instructions
Always keep in mind the following safety instructions:
- Connect only in the complete absence of line voltage
- If overvoltage surges are expected, overvoltage arresters should be installed

Take note of safety instructions for Ex applications

In hazardous areas you should take note of the appropriate regulations, conformity and type approval certificates of the sensors and power supply units.

Select power supply
With VEGATOR 536 and 537, the voltage supply can be 20 … 53 V AC or 20 … 72 V DC.

The power supply with VEGATOR 636 can be 20 … 253 V AC, 50/60 Hz or 20 … 72 V DC.

Selecting connection cable
Power supply of VEGATOR is connected with standard cable according to the national installation standards.

Standard two-wire cable without screening can be used to connect sensors. If electromagnetic interference is expected, screened cable must be used.

Cable screening and grounding
Connect the cable screen on both ends to ground potential. In the sensor, the screen must be connected directly to the internal ground terminal. The ground terminal outside on the housing must be connected to the potential equalisation.

If potential equalisation currents are expected, the screen connection on VEGATOR must be made via a ceramic capacitor (e. g. 1 nF, 1500 V). The low frequency potential equalisation currents are thus suppressed, but the protective effect against high frequency interference signals remains.

Select connection cable for Ex applications

Take note of the corresponding installation regulations for Ex applications. In particular, make sure that no potential equalisation currents flow over the cable screen. In case of grounding on both sides this can be achieved by the use of a capacitor or a separate potential equalisation.

Keep in mind that with Ex versions the Ex separating chamber (above the sensor terminals) must be attached before setup.

4.2 Wiring plan

VEGATOR 536

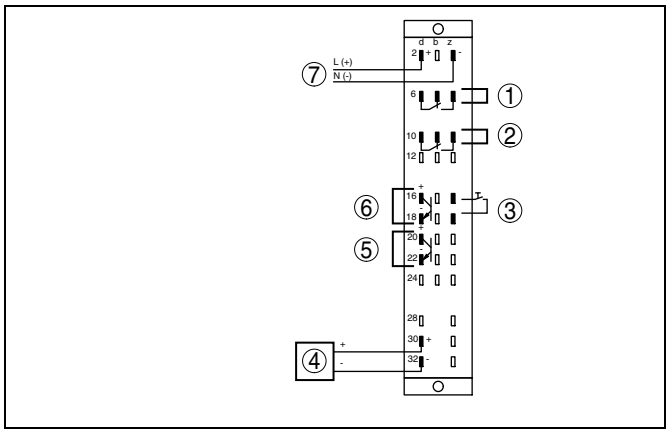


Fig. 2: Wiring plan - VEGATOR 536

1 Fail safe relay
2 Relay output (limit level)
3 Reset of alarm functions
4 Sensor input
5 Transistor output (limit level)
6 Fail safe transistor
7 Voltage supply

VEGATOR 537

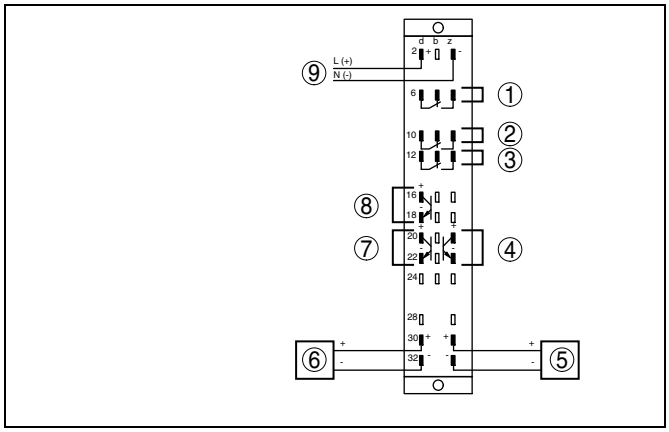


Fig. 3: Wiring plan - VEGATOR 537

1 Fail safe relay
2 Relay output 1 (limit level 1)
3 Relay output 2 (limit level 2)
4 Transistor output 2 (limit level 2)
5 Sensor input 2
6 Sensor input 1
7 Transistor output 1 (limit level 1)
8 Fail safe transistor
9 Voltage supply

34160-EN-080603

VEGATOR 636

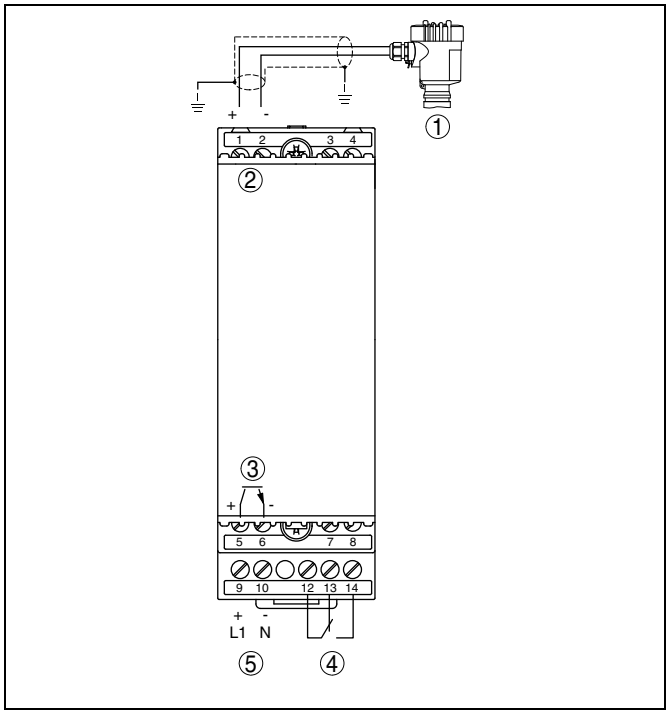


Fig. 4: Wiring plan - VEGATOR 636

1 Sensor
2 Sensor input
3 Transistor output
4 Relay output
5 Supply voltage

NAMUR amplifier

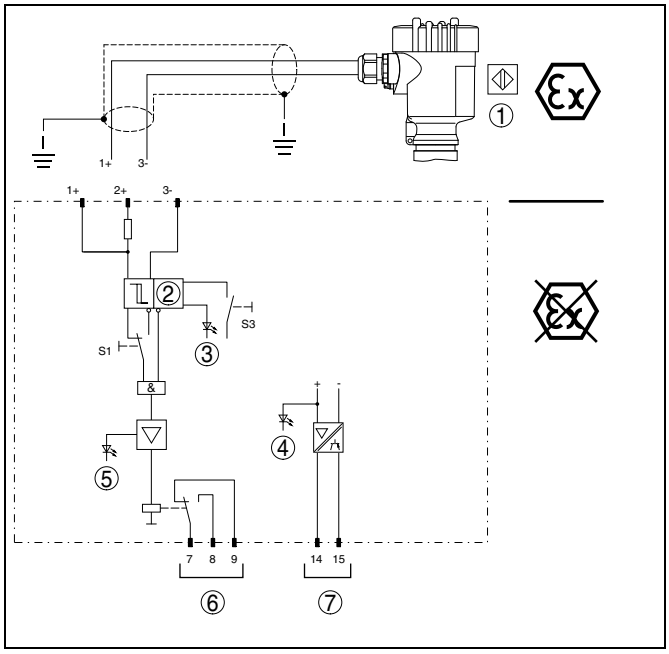


Fig. 5: Wiring plan - NAMUR switching amplifier (e.g. KFD2-SR-EX1.W)

1 Sensor input - NAMUR sensor
2 Fail safe fault monitoring
3 Control lamp - Fault signal (red)
4 Control lamp - Power supply (green)
5 Signal lamp - Relay output (yellow)
6 Relay output
7 Voltage supply

34160-EN-080603

5 Operation

5.1 Operating system - VEGATOR 536

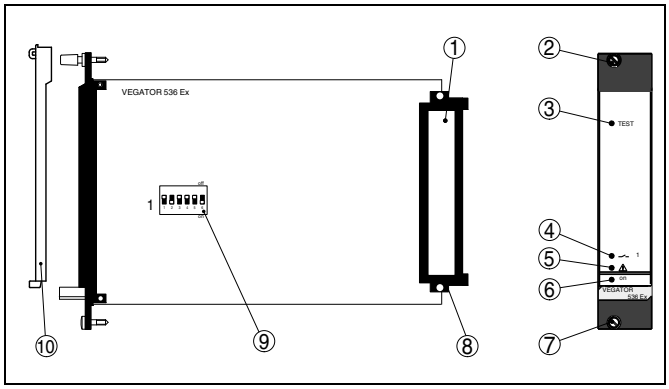


Fig. 6: Indicating and adjustment elements - VEGATOR 536

1 Wiring plan
2 Fixing screw (lead-sealable)
3 Test key - channel 1
4 Control lamp - level relay 1
5 Control lamp - Fault signal channel 1
6 Control lamp - power supply
7 Fixing screw
8 Connection plug board
9 DIL switch block - channel 1
10 Transparent cover

5.2 Adjustment elements - VEGATOR 536

Control lamps
Control lamps (LED) in the front plate indicate operation, switching status and fault signal.

- Green
  - Operating control lamp
  - Mains voltage on, instrument is operating
- Red
  - Failure lamp
  - Fault on the sensor circuit due to sensor failure or line break
  - If the fail safe relay is deenergized, the red failure lamp will light
- Yellow
  - Relay control lamp
  - The yellow relay control lamp reacts depending on the set mode (A/B)
  - Generally the relay control lamp shows the activated (energized) condition of the relay
  - A dark relay control lamp means that the relay is deenergised (transistor blocks)

DIL switch - Mode
A DIL switch block with 6 switches is located on the circuit board of the signal conditioning instrument
The individual switches are allocated as follows:

- 1 - A/B mode
  - A - Max. detection or overflow protection
  - B - Min. detection or dry run detection
- 2 - Switch off delay (za)
- 3 - Switch on delay (ze)
- 4 - Switching delay 2 s
- 5 - Switching delay 6 s
- 6 - Switching delay 12 s

With switch 1 you can adjust the mode (A - overfill protection or B - dry run protection).

Information:
Adjust the requested mode by inserting VEGATOR because the switches are no longer accessible in mounted condition.

With switch 2 and 3 you can set switch off and/or switch on delays independent from each other.
The delay refers to the switching function of the relay and transistor outputs.
In the following example, mode A (max. detection of overfill protection) is selected (switch 1). The switch on delay is activated (switch 3) and the switching delay is set to 8 seconds (switch 4, 5 and 6).

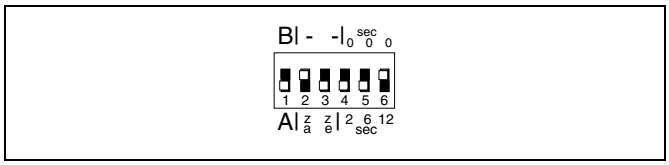


Fig. 7: DIL switch block

With switches 4, 5 and 6 you can adjust the switching delay respectively. The times of the activated time switches accumulate. If the switch on (ze) and switch off delay (za) are switched on together, the set time applies to both delay modes.
Hence the relay deenergises with 8 seconds delay time when the switching point is reached.

Information:
Keep in mind that the switching delay of the sensor and signal conditioning instrument accumulate.

Fault monitoring
The measuring system is continuously monitored. The following criteria are checked:

- Two-wire cable on line break and shortcircuit
- Interruption of the connection cable to the piezo elements
- Corrosion or damage of the tuning fork (vibrating rod)
- Break of the tuning fork (vibrating rod)
- loss of vibration
- Too low vibrating frequency
- Medium penetrating from the vessel side into the sensor

Test key
In systems with VEGASWING or VEGAVIB level switches in conjunction with a two-wire oscillator, a function test can be carried out. VEGATOR has an integrated test key. The test key is recessed in the front plate of the signal conditioning instrument. Push the test key with a suitable object (e.g. screwdriver, pen etc.).
By pushing the key, the system is checked on the following criteria:

- Switching function of the switching outputs

34160-EN-080603

- Potential separation of the outputs
- The signal processing of the signal conditioning instrument

5.3 Operating system - VEGATOR 537

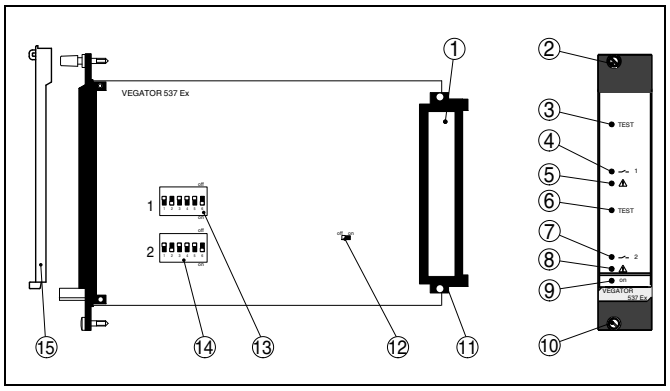


Fig. 8: Indicating and adjustment elements - VEGATOR 537

1 Wiring plan
2 Fixing screw (lead-sealable)
3 Test key - channel 1
4 Control lamp - level relay 1
5 Control lamp - Fault signal channel 1
6 Test key - channel 2
7 Control lamp - level relay 2
8 Control lamp - Fault signal channel 2
9 Control lamp - power supply
10 Fixing screw
11 Connection plug board
12 Switch - min./max. control
13 DIL switch block - channel 1
14 DIL switch block - channel 2
15 Transparent cover

5.4 Adjustment elements - VEGATOR 537

Control lamps
Control lamps (LED) in the front plate indicate operation, switching status and fault signal.

- Green
  - Operating control lamp
  - Mains voltage on, instrument is operating
- Red
  - Failure lamp
  - Fault on the sensor circuit due to sensor failure or line break
  - If the fail safe relay is deenergized, the red failure lamp will light
- Yellow
  - Relay control lamp
  - The yellow relay control lamp reacts depending on the set mode (A/B)
  - Generally the relay control lamp shows the activated (energized) condition of the relay
  - A dark relay control lamp means that the relay is deenergised (transistor blocks)

DIL switch - Mode
A DIL switch block with 6 switches per channel is located on the circuit board of the signal conditioning instrument
The individual switches are allocated as follows:

- 1 - A/B mode
  - A - Max. detection or overflow protection
  - B - Min. detection or dry run detection
- 2 - Switch off delay (za)
- 3 - Switch on delay (ze)
- 4 - Switching delay 2 s
- 5 - Switching delay 6 s
- 6 - Switching delay 12 s

With switch 1 you can adjust the mode (A - overfill protection or B - dry run protection).

Information:
Adjust the requested mode by inserting VEGATOR because the switches are no longer accessible in mounted condition.

With switch 2 and 3 you can adjust switch off and/or switch on delays independent of each other.
The delay refers to the switching function of the relay and transistor outputs.
In the following example, mode A (max. detection of overfill protection) is selected (switch 1). The switch on delay is activated (switch 3) and the switching delay is set to 8 seconds (switch 4, 5 and 6).

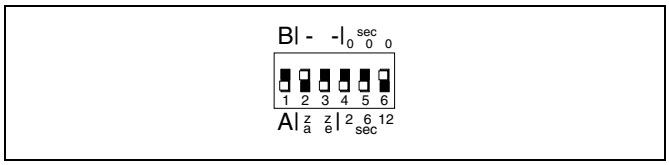


Fig. 9: DIL switch block

With switches 4, 5 and 6 you can adjust the switching delay respectively. The times of the activated time switches accumulate. If the switch on (ze) and switch off delay (za) are switched on together, the set time applies to both delay modes.
Hence the relay deenergises with 8 seconds delay time when the switching point is reached.

Information:
Keep in mind that the switching delay of the sensor and signal conditioning instrument accumulate.

Switch - min./max. control
The switch min./max. control is used for linking both channels (sensor inputs) to one common min./max. signal.
So you can realise a pump control.

Fault monitoring
The measuring system is continuously monitored. The following criteria are checked:

- Two-wire cable on line break and shortcircuit
- Interruption of the connection cable to the piezo elements
- Corrosion or damage of the tuning fork (vibrating rod)
- Break of the tuning fork (vibrating rod)
- loss of vibration

34160-EN-080603

- Too low vibrating frequency
- Medium penetrating from the vessel side into the sensor

Test key
In systems with VEGASWING or VEGAVIB level switches in conjunction with a two-wire oscillator, a function test can be carried out. VEGATOR has an integrated test key per channel. The test keys are recessed in the front plate of the signal conditioning instrument. Push the test key with a suitable object (e.g. screwdriver, pen etc.).
By pushing the key, the system is checked on the following criteria:

- Switching function of the switching outputs
- Potential separation of the outputs
- The signal processing of the signal conditioning instrument

5.5 Operating system - VEGATOR 636

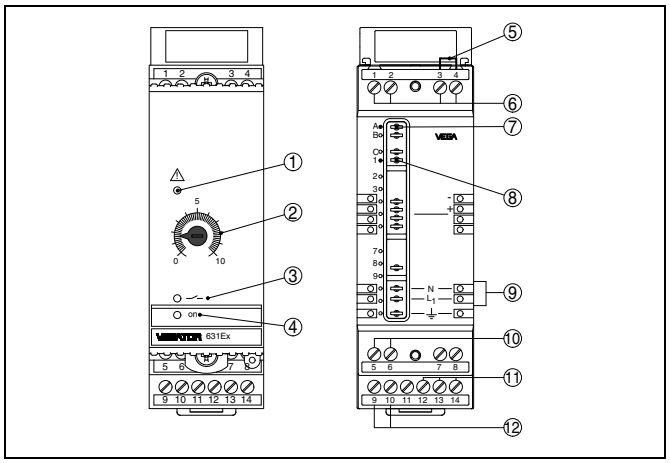


Fig. 10: Indicating and adjustment elements

1 Test key
2 Control lamp - level relay (LED)
3 Control lamp - fail safe relay (LED)
4 Control lamp - power supply (LED)
5 Ex separating chamber
6 Terminal for probe
7 Sockets for bridges
8 Transistor output
9 Relay output
10 Power supply

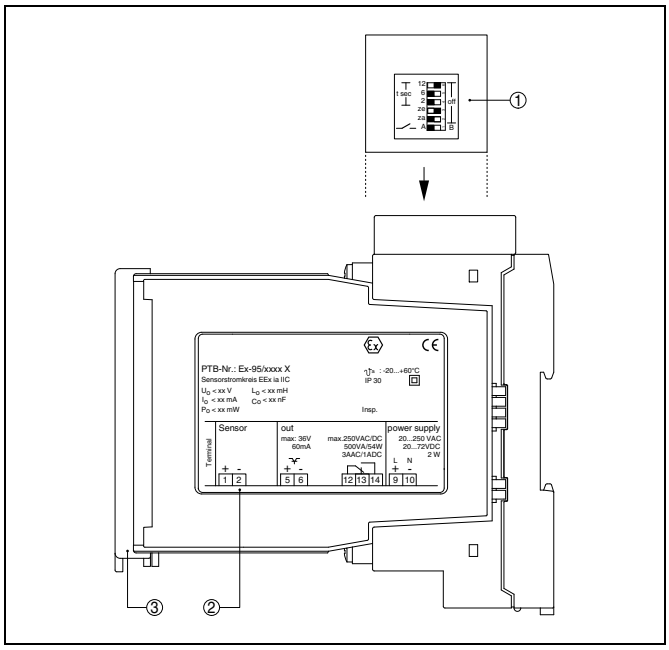


Fig. 11: Indicating and adjustment elements

1 DIL switch block
2 Type label
3 Transparent cover

5.6 Adjustment elements - VEGATOR 636

Control lamps
Control lamps (LED) in the front plate indicate operation, switching status and fault signal.

- Green
  - Operating control lamp
  - Mains voltage on, instrument is operating
- Red
  - Failure lamp
  - Fault on the sensor circuit due to sensor failure or line break
  - If the fail safe relay is deenergized, the red failure lamp will light
- Yellow
  - Relay control lamp
  - The yellow relay control lamp reacts depending on the set mode (A/B)
  - Generally the relay control lamp shows the activated (energized) condition of the relay
  - A dark relay control lamp means that the relay is deenergised (transistor blocks)

DIL switch block
Laterally on top (covered when mounted) there is a DIL switch block with six switches. The individual switches are assigned as follows:

- 1 - A/B mode
  - A - Max. detection or overflow protection
  - B - Min. detection or dry run detection

34160-EN-080603

- 2 - Switch off delay (za)
- 3 - Switch on delay (ze)
- 4 - Switching delay 2 s
- 5 - Switching delay 6 s
- 6 - Switching delay 12 s

With switch 1 you can adjust the mode (A - overfill protection or B - dry run protection).
With switches 2 and 3 you can set switch off and/or switch on delays independent of each other.
The delay refers to the switching function of the relay.
In the example (see previous illustration), mode A (max. detection of overfill protection) is selected (switch 1). The switch off delay is activated (switch 2) and the switching delay is set to 8 seconds (switch 4, 5 and 6).
With switches 4, 5 and 6 you can adjust the switching delay. The times of the activated time switches accumulate. If the switch on (ze) and switch off delay (za) are switched on together, the set time applies to both delay modes.
Hence the relay deenergises with 8 seconds delay time when the switching point is reached.

Information:
Keep in mind that the switching delay of the sensor and signal conditioning instrument accumulate.

Fault monitoring
The measuring system is continuously monitored. The following criteria are checked:
- Two-wire cable on line break and shortcircuit
- Interruption of the connection cable to the piezo elements
- Corrosion or damage of the tuning fork (vibrating rod)
- Break of the tuning fork (vibrating rod)
- loss of vibration
- Too low vibrating frequency
- Medium penetrating from the vessel side into the sensor

Test key
In systems with VEGASWING or VEGAVIB level switches in conjunction with a two-wire oscillator, a function test can be carried out. VEGATOR has an integrated test key. The test key is recessed in the front plate of the signal conditioning instrument. Push the test key with a suitable object (e.g. screwdriver, pen etc.).
By pushing the key, the system is checked on the following criteria:
- Switching function of the switching outputs
- Potential separation of the outputs
- The signal processing of the signal conditioning instrument

5.7 Adjustment system - NAMUR switch amplifier

The switch amplifier transmits digital signals from the hazardous area.

Signal generators can be sensors according to DIN EN 60947-5-6 (NAMUR), e.g. a vibrating level switch with NAMUR interface.

The control circuit is monitored on line break and short-circuit. The indication of external interferences is carried out according to NAMUR NE 44 by a red flashing control lamp (LED).

The intrinsically safe input is reliably separated from the output and mains according to DIN EN 50020. The relay output is reliably separated from mains according to IEC 66140.

The following instrument versions have a sensor input:
- KFA6-SR2-EX1.W (230 V AC)
- KFD2-SR2-EX1.W (24 V DC)

The following instrument versions have two sensor inputs:
- KFA6-SR2-EX2.W (230 V AC)
- KFD2-SR2-EX2.W (24 V DC)

34160-EN-080603

6 Technical data

General data

VEGATOR 536, 537

Series	19" module card, multipoint connector according to DIN 41612, including transparent cover (lockable)
Weight	150 g (5.3 oz)

VEGATOR 636

Series	Module unit with plug-in socket for mounting on carrier rail 35 x 7.5 or 35 x 5 according to EN 50022
Weight	170 g (6 oz)
Housing material	Noryl SE100, Lexan 920A
Socket material	Noryl SE100, Noryl SE1 GFN3

NAMUR amplifier

Series	For mounting on carrier rail 35 x 7.5 or 35 x 15 according to EN 50022
Weight	150 g (5.3 oz)
Housing material	Makrolon

Voltage supply

VEGATOR 536, 537

Supply voltage	20 … 53 V AC, 50/60 Hz, 20 … 72 V DC
Max. power consumption	3 W

VEGATOR 636

Supply voltage	20 … 253 V AC, 50/60 Hz, 20 … 72 V DC
Max. power consumption	3 W (3 … 18 VA)

NAMUR amplifier

Supply voltage	
– KFA6-SR2-EX1.W	20 … 253 V AC, 50/60 Hz
– KFA6-SR2-EX2.W	20 … 253 V AC, 50/60 Hz
– KFD2-SR2-EX1.W	20 … 30 V DC
– KFD2-SR2-EX2.W	20 … 30 V DC
Reference current	≤ 50 mA
Residual ripple	≤ 10 %
Max. power consumption	1.3 W
Power loss	0.7 W

Sensor input

VEGATOR 536, 537

Quantity	
– VEGATOR 536	1 sensor input
– VEGATOR 537	2 sensor inputs
Data transmission	Analogue
Switching threshold	12 mA
Current limitation	24 mA (permanently short-circuit proof)
Sensor power supply	15 … 18 V DC
Detection line break	≤ 3.6 mA
Detection shortcircuit	≥ 21 mA
Connection cable	2-wire
Resistance per conductor	max. 35 Ω

VEGATOR 636

Quantity	1
Data transmission	Analogue
Hysteresis	100 µA
Switching threshold	12 mA
Current limitation	24 mA (permanently short-circuit proof)
Sensor power supply	15 … 18 V DC
Detection line break	≤ 3.6 mA
Detection shortcircuit	≥ 21 mA

34160-EN-080603

Connection cable	2-wire
Resistance per conductor	max. 35 Ω

NAMUR amplifier

Quantity	
– KFA6-SR2-EX1.W, KFD2-SR2-EX1.W	1 sensor input
– KFA6-SR2-EX2.W, KFD2-SR2-EX2.W	2 sensor inputs
Open circuit voltage / short-circuit current	8 V DC / 8 mA
Switching point / switching hysteresis	1.2 … 2.1 mA / 0.2 mA
Pulse / Break ratio	≥ 20 ms / ≥ 20 ms
Sensor power supply	15 … 18 V DC
Line monitoring	Break I ≤ 0.1 mA, short-circuit I > 6 mA

Relay output

VEGATOR 536, 537

Number, function	
– VEGATOR 536	1 x switching relay (spdt), 1 x fail safe relay (spdt)
– VEGATOR 537	2 x switching relay (spdt), 1 x fail safe relay (spdt)
Switching delay	0.2 … 20 s, directional switching
Mode	A/B switch (A - max. detection or overfill protection, B - min. detection or dry run protection)
Contact	1 x spdt
Contact material	AgNi 0.15 hard gold-plated
Turn-on voltage	≥ 10 mV DC, ≤ 253 V AC/DC
Switching current	≥ 10 µA DC, ≤ 3 A AC, 1 A DC
Breaking capacity	≤ 500 VA, ≤ 54 W DC

VEGATOR 636

Number, function	1 x switching relay (spdt)
Switching delay	0.2 … 20 s, directional switching
Mode	A/B switch (A - max. detection or overfill protection, B - min. detection or dry run protection)
Contact	1 x spdt
Contact material	AgNi 0.15 hard gold-plated
Turn-on voltage	≥ 10 mV DC, ≤ 253 V AC/DC
Switching current	≥ 10 µA DC, ≤ 3 A AC, 1 A DC
Breaking capacity	≤ 500 VA, ≤ 54 W DC

NAMUR amplifier

Number, function	
– KFA6-SR2-EX1.W, KFD2-SR2-EX1.W	1 x switching relay, spdt
– KFA6-SR2-EX2.W, KFD2-SR2-EX2.W	2 x switching relay, spdt
On delay/Off delay	20 ms
Contact load	
– AC	253 V AC, 4 A
– DC	40 V DC, 2 A ohmic load

Transistor output

VEGATOR 536, 536

Number, function	
– VEGATOR 536	1 output, synchronously switching with the relay
– VEGATOR 537	2 outputs, synchronously switching with the relays
Galvanic separation	Floating
Maximum values	
– U_B	36 V DC
– I_B	≤ 60 mA
Transistor voltage loss (U_{CE})	approx. 1.5 V at I_B 60 mA
Inverse current (I_0)	≤ 10 µA

VEGATOR 636

Number, function	1 output, synchronously switching with the relay
Galvanic separation	Floating

34160-EN-080603

Maximum values	
– U_B	36 V DC
– I_B	≤ 60 mA, short-circuit proof
Transistor voltage loss (U_{CE})	approx. 1.5 V at I_B 60 mA
Inverse current (I_0)	< 10 µA

Adjustment elements

VEGATOR 536, 537

DIL switch	for preadjustment of the switching delay time and mode
Switch - min./max. control (VEGATOR 537)	for linking of sensor inputs
Control lamps in the front plate	
– Status indication operating voltage	Signal lamp green (LED)
– Status indication fault signal	Signal lamp red (LED)
– Status indication switching point control	Signal lamp yellow (LED)

VEGATOR 636

DIL switch block	for preadjustment of the switching delay time and mode
Control lamps in the front plate	
– Status indication operating voltage	Signal lamp green (LED)
– Status indication fault signal	Signal lamp red (LED)
– Status indication switching point control	Signal lamp yellow (LED)

NAMUR amplifier

DIL switch block	for preadjustment of the mode
Control lamps	
– Status indication operating voltage	Signal lamp green (LED)
– Status indication fault signal	Signal lamp red (LED)
– Status indication switching point control	Signal lamp yellow (LED)

Ambient conditions

VEGATOR 536, 537

Ambient temperature	-20 … +60 °C (-4 … +140 °F)
Storage and transport temperature	-40 … +70 °C (-40 … +158 °F)

VEGATOR 636

Ambient temperature	-20 … +60 °C (-4 … +140 °F)
Storage and transport temperature	-40 … +70 °C (-40 … +158 °F)

NAMUR amplifier

Ambient temperature	-20 … +60 °C (-4 … +140 °F)
Storage and transport temperature	-40 … +70 °C (-40 … +158 °F)

Electromechanical data

VEGATOR 536, 537

Electrical connection	
– Carrier BGT596 Ex	33-pole multipoint connector, series F (d, b, z) with coding holes
– Housing type 505 Ex	Screw terminal for wire cross-section up to 1.5 mm² (AWG 16)

VEGATOR 636

Screw terminals	for wire cross-section up to 1.5 mm² (AWG 16)

NAMUR amplifier

Screw terminals	for wire cross-section up to 1.5 mm² (AWG 16)

34160-EN-080603

Electrical protective measures

VEGATOR 536, 537

Protection	
– Signal conditioning instrument - not mounted	IP 00
– mounted into BGT596 Ex - front side (completely equipped)	IP 30
– mounted into BGT596 Ex - upper and lower side	IP 20
– mounted into BGT596 Ex - wiring side	IP 00
– mounted into housing type 505 Ex	IP 30
Overvoltage category	II
Protection class	II

VEGATOR 636

Protection	
– Signal conditioning instrument	IP 30
– Plug-in socket	IP 20
Overvoltage category	II
Protection class	II
Electrical separating measures	reliable separation (VDE 0106, part 1) between power supply, sensor input, level relay and transistor output

NAMUR amplifier

Protection	IP 20

Approvals[1)]

VEGATOR 536, 537

ATEX	ATEX II (1) GD [EEx ia] IIC/IIB
Others	WHG

VEGATOR 636

ATEX	ATEX II (1) GD [EEx ia] IIC
Others	WHG Ship approval

NAMUR amplifier

ATEX	ATEX II (1) GD [EEx ia] IIC

34160-EN-080603

[1)] Deviating data in Ex applications: see separate safety instructions.

7 Dimensions

VEGATOR 536, 537

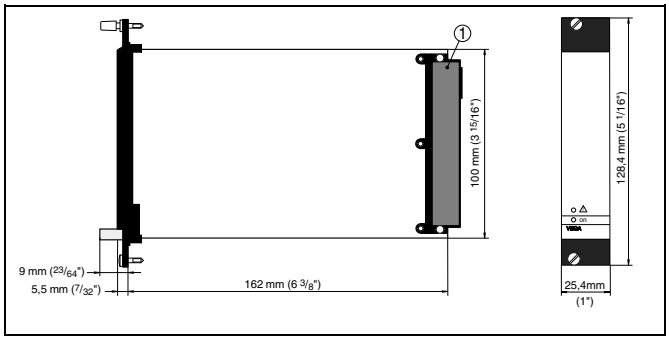


Fig. 12: VEGATOR 536, 537

1 Male multipoint connector

VEGATOR 636

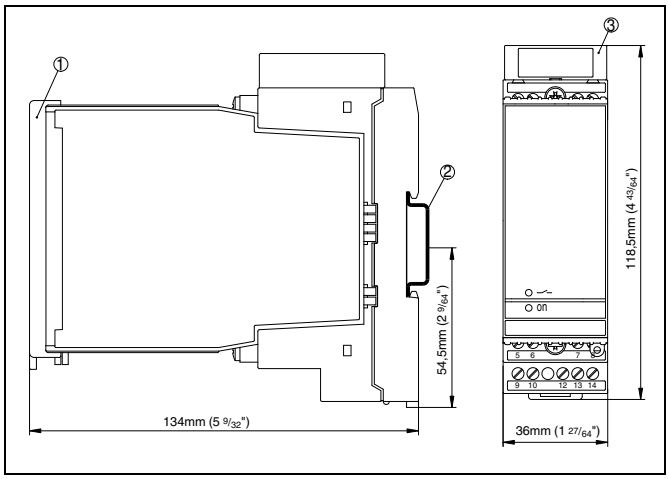


Fig. 13: VEGATOR 636

1 Transparent cover
2 Carrier rail 35 x 7.5 or 35 x 15 according to EN 50022
3 Ex separating chamber

NAMUR amplifier

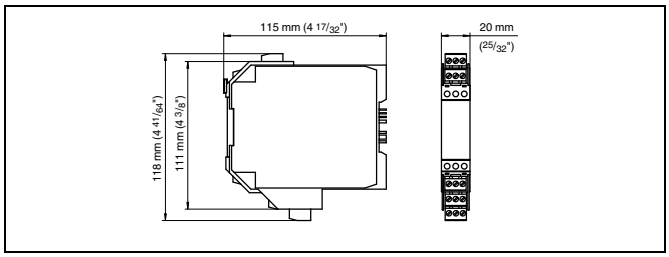
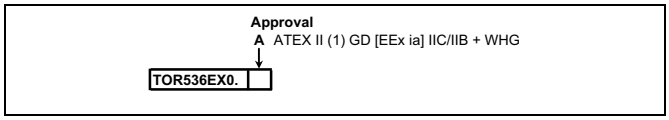


Fig. 14: NAMUR amplifier

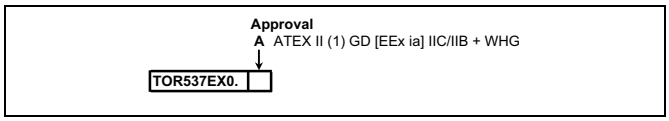
34160-EN-080603

8 Product code

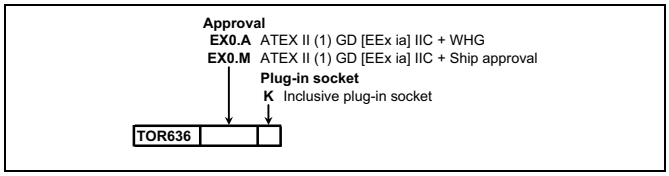
VEGATOR 536



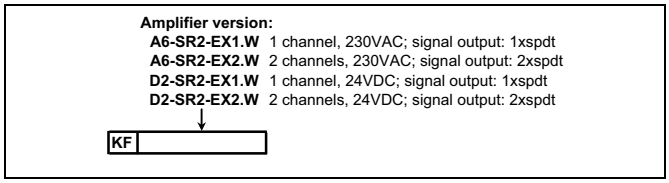
VEGATOR 537



VEGATOR 636



NAMUR amplifier



34160-EN-080603

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VEGA

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany
Phone +49 7836 50-0
Fax +49 7836 50-201
E-Mail: info@de.vega.com
www.vega.com

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and much, much more

34160-EN-080603