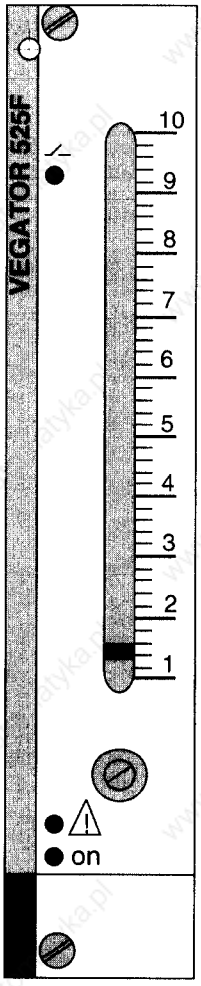
VEGATOR 525 F

VEGA

TIB • Technical Information • Operating Instructions



Level switch

300
400
500
800

- with fault monitoring
- for connection of a VEGA–two-wire transducer
- European card DIN 41 494

VEGA Grieshaber KG
Electronic level measurement
Am Hohenstein 113
Postfach 11 42
D-77757 Schiltach
Phone 0 78 36/50-0
Fax 0 78 36/50-201

Application

The level switch VEGATOR 525 F is used for level detection.

Virtually all products can be measured whether powders, granules or liquids. The switching command can either be triggered by exceeding or falling below the level.

Typical applications are overfill protection, protection against dry running of pumps as well as combination of two instruments two-wire-control.

The VEGATOR 525 F is in conjunction with a suitable transducer as overfill protection acc. to WHG as well as acc. to the regulations for combustible liquids (VbF).

Note!
In applications acc. to WHG or VbF the respective documents (test certificates) must be observed.

Configuration

The VEGATOR 525 F consists of:

- Circuit board 100 x 160 mm (European size) with electronics and multipoint connector DIN 41 612, series F, 32-pole d, z
- Front plate with
  - transparent cover
  - 2 screws
  - relay control lamp
  - linear scale
  - switch point adjuster
  - signal lamp
  - mains control lamp
- Relay output with floating changeover contacts (standard)
  or
- floating transistor output (option)

A measuring system consists of:

- VEGATOR 525 F
- Multipoint connector DIN 41 612 32-pole d, z with guide rails and screws
- Carrier type 596
- Power supply unit VEGASTAB 592
- VEGA-two-wire transducer with oscillator

Function

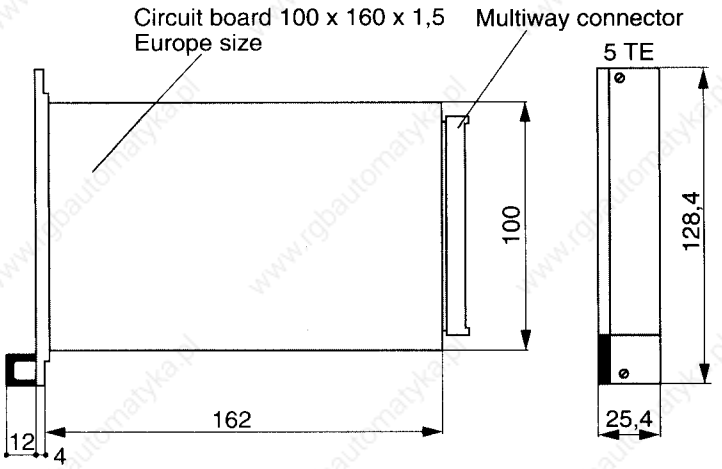
The level dependent current of a VEGA-transducer is converted into a switching command by VEGATOR 525 F.

Integral fault monitoring detects short-circuit or line break of it's input as well as failures of the electronics in the transducer. In case of failure the signal lamp lights and the two output relays de-energize.

Technical data

Power supply:		20 ... 28 V DC or AC
Power consumption at U_N:		approx. 3 VA
Transducer connection	2-wire	
	resistance per conductor	max. 25 Ohm
Output 1 (Standard)	type	relay output
	contact	1 x floating spdt
	function	level signal
	mode	A / B
	relay data:	
	contact material	AgCdO and Au plated
	min. turn-on voltage	100 mV
	min. switching current	10 µA
	max. turn-on voltage	AC 250 V, DC 60 V
	max. switching current	AC 2 A, DC 1 A
	max. breaking capacity	125 VA, 60 W
Output 2 (Standard)	type	relay output
	contact	1 x floating spdt
	function	fail safe
	relay data:	
	contact material	AgCdO and Au plated
	min. turn-on voltage	100 mV
	min. switching current	10 µA
	max. turn-on voltage	AC 250 V, DC 60 V
	max. switching current	AC 2 A, DC 1 A
	max. breaking capacity	125 VA, 60 W
Output 1 and 2 (Option)	type	floating transistor output $U_B$max = 28 V DC $I_B$max = 10 mA $U_{CE} \leq 0{,}8$ V at I_B = 10 mA
Integration time		adjustable range I = 0...10 sec. range II = 10...20 sec. range can be adjusted by hook switch
Ambient temperature range		–20 ... +50°C / –4 ... 122°F
Storage and transport temperature		–20 ... +70°C / –4 ... 158°F
Series	European size	DIN 41 612
	Circuit board	100 x 160 x 1,5 mm
Multipoint connector		DIN 41 612, series F, 32-pole d, z
Weight		approx. 180 g

Dimensional drawing

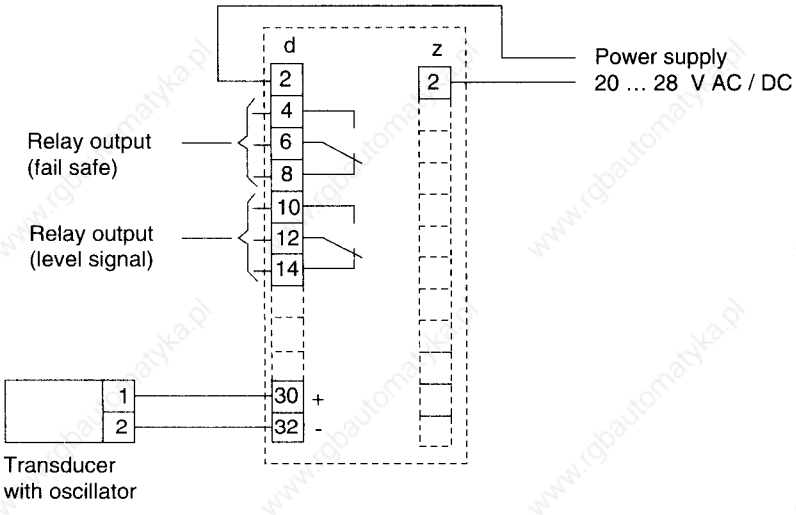


Mounting instructions

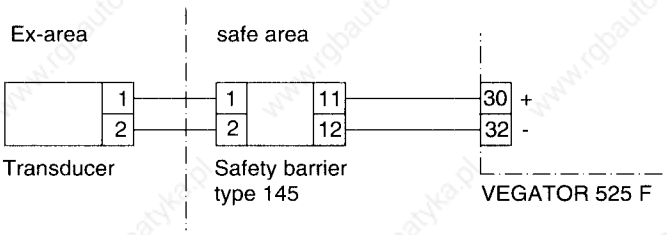
The VEGATOR 525 F is designed as module in European size (DIN 41 494) and is provided for installation in the VEGA 19"-carrier type 596.

Supplementary information on mounting see TIB "Carrier type 596".

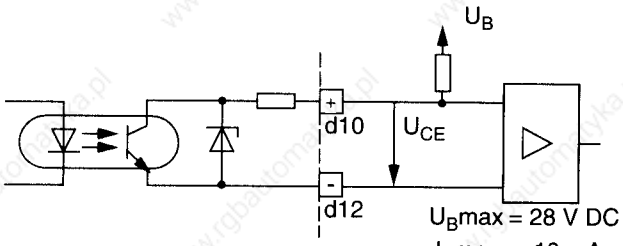
Electrical connection



Connection in conjunction with safety barrier type 145 e.g. for overfill protection acc. to VbF

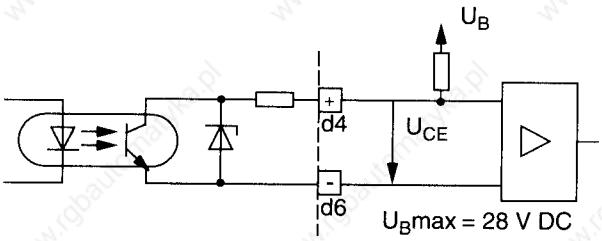


Option: floating transistor output



level signal

$U_B$max = 28 V DC
$I_B$max = 10 mA
U_{CE} ≤ 0,8 V at
I_B = 10 mA

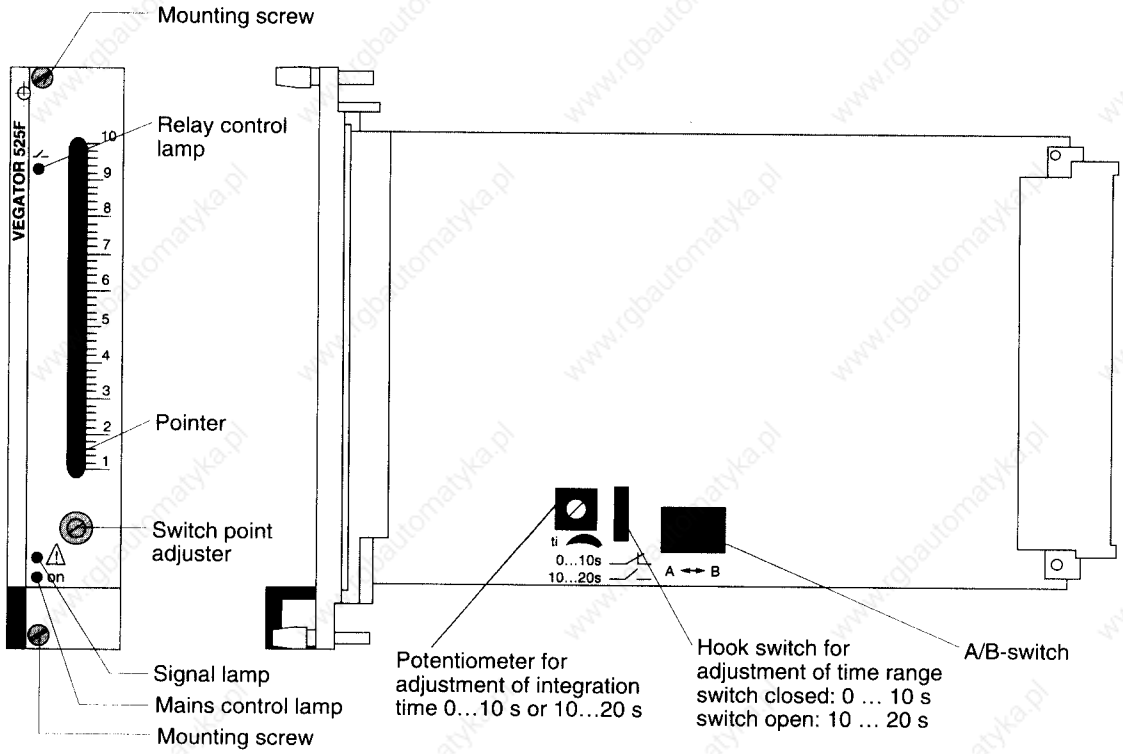


fail safe

$U_B$max = 28 V DC
$I_B$max = 10 mA
U_{CE} ≤ 0,8 V at
I_B = 10 mA

Note:
If VEGATOR 525 F is used an part of an overfill protection acc. to WHG or VbF, the transistor output is **not** approved.

Start-up



- Carry out electrical connection acc. to wiring diagram (see page 4 and 5)
- Switch on mains, should comply with the voltage stated on the type plate (type plate is on the multiway connector)
- set A / B-switch to the desired mode A or B (function of A / B switch see below)
- set integration time t_i to 0 s
- adjust requested switch point with switch point adjuster (see below)

A / B-switch, position A

Transducer covered:

- output relay de-energised
- relay control lamp lights
- connection d10 – d12 as well as z12 – z14 are connected through relay

This position is recommended e.g. as **overfill protection.**

A / B-switch, position B

Transducer **un**covered:

- output relay de-energized
- relay control lamp lights
- connection d10 – d12 as well as z12 – z14 are connected through relay

This position is recommended e.g. as protection against **dry running** of pumps.

Note!
Adjust mode such that in case of mains failure no undesired switching functions are triggered.

Switching command of the fail safe relay

Interference free operation:

Fail safe relay energized
Connections d4 – d6 are connected through relay
Signal lamp does not light

Interference:

Fail safe relay de-energized
Connection d6 – d8 are connected through relay
Signal lamp lights

Switch point adjustment for the use of capacitive electrodes

a.) for horizontally mounted electrodes

Mode A

1. Lower product until electrode is uncovered.
2. Set switch point adjuster to "1". Relay control lamp lights.
3. Turn switch point adjuster slowly clockwise until relay control lamp extinguishes. Note determined scale value.
4. Cover electrode with product. Relay control lamp lights.
5. Turn switch point adjuster further slowly clockwise until relay control lamp extinguishes. Note determined value (if lamp does not extinguish, scale value "10" is valid).
6. Set switch point adjuster to mean value of the scale values of item 3. and 5.
7. Adjust integration time.

Mode B

1. Lower product until electrode is uncovered.
2. Set switch point adjuster to "1". Relay control lamp does not light.
3. Turn switch point adjuster slowly clockwise until relay control lamp lights. Note determined scale value.
4. Cover electrode with product. Relay control lamp extinguishes.
5. Turn switch point adjuster further slowly clockwise until relay control lamp lights. Note determined value (if lamp does not light, scale value "10" is valid).
6. Set switch point adjuster to mean value of the scale values of item 3. and 5.
7. Adjust integration time.

b.) for vertically mounted electrodes

Mode A

1. Cover electrode up to the desired switch point.
2. Set switch point adjuster to "10". Relay control lamp does not light.
3. Turn switch point adjuster slowly anti-clockwise, until relay control lamp lights.

Mode B

1. Cover electrode up to the desired switch point.
2. Set switch point adjuster to "1". Relay control lamp does not light.
3. Turn switch point adjuster slowly clockwise, until relay control lamp lights.

VEGA

VEGA Grieshaber KG
Electronic level measurement
Am Hohenstein 113
Postfach 11 42
D-77757 Schiltach
Phone 0 78 36/50-0
Fax 0 78 36/50-201