Conductive

Overview 122
VEGAKON series 60 126
EL 1 ... EL 8 130
VEGATOR level switches 139
VEGAKON
Proven compact level switches

Measuring principle and applications
The instruments work according to the conductive measuring principle and are used in conductive liquids. The probe detects the product resistance when being immersed. A low alternating current flows which is detected by the integrated electronics and converted into a switching command. The switching point is determined via the mounting position or the length of the respective probe. The easy and robust construction of the sensors offers a maintenance-free and reliable level detection in all areas of industrial measurement technique. Typical applications are e.g. overfill protection, pump control or dry run protection.

Conductive probes EL
Flexible level detection

Measuring principle and applications
The instruments are used for level detection in conductive liquids. For operation of the conductive probe, a VEGATOR 258C or 632 signal conditioning instrument is required. When the electrode is immersed, a low alternating current flows which is detected by the VEGATOR signal conditioning instrument and converted into a respective switching signal. The switching point is determined via the mounting position or the length of the respective probe. The easy and robust construction of the sensors offers a maintenance-free and reliable level detection in all areas of industrial measurement technique. Typical applications are e.g. overfill protection, pump control or dry run protection in vessels and pipelines.
## Overview – VEGAKON

<table>
<thead>
<tr>
<th></th>
<th>VEGAKON 61</th>
<th>VEGAKON 66</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Version</strong></td>
<td>Partly insulated compact level switch</td>
<td>Compact level switch, partly insulated rod</td>
</tr>
<tr>
<td><strong>Isolation</strong></td>
<td>PTFE</td>
<td>PP</td>
</tr>
<tr>
<td><strong>Probe length</strong></td>
<td>–</td>
<td>0.12 … 4 m</td>
</tr>
<tr>
<td><strong>Process fitting</strong></td>
<td>Thread G1 Cone</td>
<td>Thread G1½</td>
</tr>
<tr>
<td><strong>Process temperature</strong></td>
<td>-40 ... +150 °C</td>
<td>-40 ... +100 °C</td>
</tr>
<tr>
<td><strong>Process pressure</strong></td>
<td>-1 ... +25 bar (-100 ... +2500 kPa)</td>
<td>-1 ... +6 bar (-100 ... +600 kPa)</td>
</tr>
</tbody>
</table>
## Overview – Conductive probes EL

<table>
<thead>
<tr>
<th>EL 1</th>
<th>EL 3</th>
<th>EL 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Version</strong></td>
<td>Partly insulated rod</td>
<td>Partly insulated rod</td>
</tr>
<tr>
<td><strong>Isolation</strong></td>
<td>PTFE</td>
<td>PTFE</td>
</tr>
<tr>
<td><strong>Probe length</strong></td>
<td>Up to 4 m</td>
<td>Up to 4 m</td>
</tr>
<tr>
<td><strong>Process fitting</strong></td>
<td>Thread G½</td>
<td>Thread G½</td>
</tr>
<tr>
<td><strong>Process temperature</strong></td>
<td>-50 ... +130 °C</td>
<td>-50 ... +130 °C</td>
</tr>
<tr>
<td><strong>Process pressure</strong></td>
<td>-1 ... +63 bar (-100 ... +6300 kPa)</td>
<td>-1 ... +63 bar (-100 ... +6300 kPa)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EL 6</th>
<th>EL 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Version</strong></td>
<td>Partly insulated cable</td>
</tr>
<tr>
<td><strong>Isolation</strong></td>
<td>PP/FEP</td>
</tr>
<tr>
<td><strong>Probe length</strong></td>
<td>Up to 50 m</td>
</tr>
<tr>
<td><strong>Process fitting</strong></td>
<td>Thread G½</td>
</tr>
<tr>
<td><strong>Process temperature</strong></td>
<td>-20 ... +100 °C</td>
</tr>
<tr>
<td><strong>Process pressure</strong></td>
<td>-1 ... +6 bar (-100 ... +600 kPa)</td>
</tr>
</tbody>
</table>
### Overview — Signal conditioning instruments for conductive probes

<table>
<thead>
<tr>
<th></th>
<th>VEGATOR 256C</th>
<th>VEGATOR 632</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring principle</td>
<td>Conductive</td>
<td>Conductive</td>
</tr>
<tr>
<td>Input</td>
<td>Single channel</td>
<td>Double channel</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>Fix</td>
<td>Adjustable</td>
</tr>
<tr>
<td>Output</td>
<td>1 x Relay output</td>
<td>2 x Relay output</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>20 … 250 V AC, 50/60 Hz</td>
<td>85 … 253 V AC, 50/60 Hz or 20 … 30 V AC, 50/60 Hz resp. 20 … 60 V DC</td>
</tr>
</tbody>
</table>
VEGAKON 61

Conductive level switch for liquids for front-flush mounting

Application area
The VEGAKON 61 is a level switch for front-flush mounting in conductive liquids. The instrument is best suited as full and empty detector in pipelines.

Advantages
- Time and cost-saving setup without adjustment with medium
- Optimum cleanability through front-flush mounting
- Maintenance-free operation through probe insensitive to buildup

Technical data
Version: partly insulated compact level switch
Process fitting: thread G1, 1 NPT
cone DN 25
Materials: 316L, PTFE
Process temperature: -40 ... +150 °C
Process pressure: -1 ... +25 bar (-100 ... +2500 kPa)

Approval
.X without ................................................................................................................................................

Process fitting
G1 Thread G1A (DIN 3852-A) PN25 ........................................................................................................
K1 Cone DN25PN25 ..........................................................................................................................

Electronics
R Relay output 20...72VDC/20...250VAC(3A) ..............................................................................
T Floating transistor (NPN/PNP) 10...55VDC ..............................................................................

Process temperature
X -40...100°C .......................................................................................................................
Z -40...150°C (with temperature adapter) ...............................................................................
Welded socket for VEGAKON 61

suitable for
1 VEGAKON 61 ................................................................................................................................................
3 VEGAKON 63 ................................................................................................................................................

Version / Material
KA Conus DN25 / 316L ................................................................................................................................
GA Thread G1 (DIN 3852-A) / 316L ........................................................................................................
GL Thread G1(DIN 3852-A) suitable f. foodstuffs / 316L ...........................................................................

Test certificate
X without ....................................................................................................................................................

Welded socket cone connection

Version / Material
KA DN25 / 316L ......................................................................................................................................

Seal
X without ................................................................................................................................................

Test certificate
X without ..................................................................................................................................................
VEGAKON 66

Conductive multiple rod level switch for liquids

Application area
The VEGAKON 66 is a level switch for conductive liquids. The instrument is suitable as full or empty detector in pipelines.

Advantages
- Reliable pump control through multiple rod probe
- High flexibility through shortenable rod probes
- Reduced stock-keeping through exchangeable rod probes

Technical data
Version: compact level switch
Probe length: up to 4 m
Process fitting: thread G1½
Material: PPN
Process temperature: -40 ... +100 °C
Process pressure: -1 ... +6 bar (-100 ... +600 kPa)
Approval
.X without ............................................................................................................................................

Process fitting / Material
G Thread G1½ (DIN 3852-A) / PPN ..................................................................................................

Number of rod electrodes
2 2 rod electrodes ..................................................................................................................
3 3 rod electrodes ..................................................................................................................

Material rod electrodes
V 316Ti ............................................................................................................................................
H Hastelloy C4 ......................................................................................................................................

Housing / Protection
P Plastic PBT / IP66 ..................................................................................................................
M Aluminium plastic-coated / IP66/IP67 ..................................................................................

Electronics
R Relay (DPDT) 20...72VDC/20...250VAC(5A) ..................................................................................
T Floating transistor (NPN/PNP) 10...55VDC ..................................................................................

KON66

Rod length L1 in mm (longest electrode)
316Ti (120-4000 mm) per 500 mm

Rod length L2 in mm (shortest electrode)
316Ti (120-4000 mm) per 500 mm

Rod length L3 in mm
316Ti (120-4000 mm) per 500 mm
EL 1

Conductive rod electrode

Application area
The rod electrode EL 1 is a universal level switch for conductive liquids. The instrument is ideal as overfill and dry run protection in conjunction with VEGATOR 256C and VEGATOR 632 signal conditioning instruments.

Advantages
- Simple installation in narrow space applications through small sensor dimensions
- Low maintenance costs through robust design
- High flexibility through shortenable probe

Technical data
Version: fully insulated rod
Probe length: up to 4 m
Process fitting: thread G½
Materials: 316Ti, PTFE
Process temperature: -50 … +130 °C
Process pressure: -1 … +63 bar (-100 … +6300 kPa)
Approval

X Without .................................................................................................................................

Number of rods
1 with 1 rod electrode ...................................................................................................

Material rod
VT 316Ti ...........................................................................................................................

Line break monitoring
X without ..........................................................................................................................
L Line break monitoring for VEGATOR 631 .................................................................
M Line break monitoring for VEGATOR 632 .................................................................

Rod length in mm
316Ti (40-4000 mm) per 250 mm
EL 3

Conductive multiple rod electrode

Application area
The multiple rod electrode EL 3 is a universal level switch for conductive liquids. The instrument is ideal as overfill and dry run protection or pump control in conjunction with VEGATOR 256C and VEGATOR 632 signal conditioning instruments.

Advantages
– Simple setup with minimum time and cost expenditure
– High flexibility through shortenable probe
– Maintenance-free through robust design

Technical data
Version: partly insulated rod
Probe length: up to 4 m
Process fitting: thread G1½
Materials: 316Ti, PTFE
Process temperature: -50 ... +130 °C
Process pressure: -1 ... +63 bar (-100 ... +6300 kPa)
<table>
<thead>
<tr>
<th>Approval</th>
<th>X Without ................................................................................................................................................</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of rods</td>
<td></td>
</tr>
<tr>
<td>2 with 2 rod electrodes</td>
<td>......................................................................................................................................................</td>
</tr>
<tr>
<td>3 with 3 rod electrodes</td>
<td>......................................................................................................................................................</td>
</tr>
<tr>
<td>4 with 4 rod electrodes</td>
<td>......................................................................................................................................................</td>
</tr>
<tr>
<td>5 with 5 rod electrodes</td>
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<tr>
<td>Material rod</td>
<td>VTV 316Ti ....................................................................................................................................</td>
</tr>
<tr>
<td>Line break monitoring</td>
<td></td>
</tr>
<tr>
<td>X without</td>
<td>......................................................................................................................................................</td>
</tr>
<tr>
<td>L Line break monitoring for VEGATOR 631</td>
<td>......................................................................................................................................................</td>
</tr>
<tr>
<td>M Line break monitoring for VEGATOR 632</td>
<td>......................................................................................................................................................</td>
</tr>
</tbody>
</table>

| EL3                                      |                                                                                                  |

| L1 in mm (longest)                       | 316Ti (50-4000 mm) per 500 mm                                                                   |
| L2 in mm (shortest)                      | 316Ti (35-4000 mm) per 500 mm                                                                   |
| L3 in mm                                 | 316Ti (50-4000 mm) per 500 mm                                                                   |
| L4 in mm                                 | 316Ti (50-4000 mm) per 500 mm                                                                   |
| L5 in mm                                 | 316Ti (50-4000 mm) per 500 mm                                                                   |
EL 4

Conductive multiple rod electrode

Application area
The multiple rod electrode EL 4 is a universal level switch for conductive liquids. The instrument is ideal as overfill and dry run protection or pump control in conjunction with VEGATOR 256C and VEGATOR 632 signal conditioning instruments.

Advantages
– Reliable pump control through multiple rod probe
– High flexibility through shortenable probe
– Reduced stockkeeping through exchangeable rod probes

Technical data
Version: partly insulated rod
Probe length: up to 4 m
Process fitting: thread G1½
Materials: 316Ti, PP
Process temperature: -20 … +100 °C
Process pressure: -1 … +6 bar (-100 … +600 kPa)
Approval

<table>
<thead>
<tr>
<th>X</th>
<th>Without</th>
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</thead>
</table>

**Number of rods**

<table>
<thead>
<tr>
<th>2</th>
<th>with 2 rod electrodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>with 3 rod electrodes</td>
</tr>
<tr>
<td>4</td>
<td>with 4 rod electrodes</td>
</tr>
<tr>
<td>5</td>
<td>with 5 rod electrodes</td>
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</table>

**Material rod**

<table>
<thead>
<tr>
<th>VTK</th>
<th>316Ti</th>
</tr>
</thead>
</table>

**Line break monitoring**

<table>
<thead>
<tr>
<th>X</th>
<th>without</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Line break monitoring for VEGATOR 631</td>
</tr>
<tr>
<td>M</td>
<td>Line break monitoring for VEGATOR 632</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EL4</th>
<th></th>
</tr>
</thead>
</table>

**L1 in mm (longest)**

316Ti (100-4000 mm) per 500 mm

**L2 in mm (shortest)**

316Ti (100-4000 mm) per 500 mm

**L3 in mm**

316Ti (100-4000 mm) per 500 mm

**L4 in mm**

316Ti (100-4000 mm) per 500 mm

**L5 in mm**

316Ti (100-4000 mm) per 500 mm
EL 6

Conductive multiple cable electrode

Application area
The multiple cable electrode EL 6 is a universal level switch for conductive liquids. The instrument is ideal as overfill and dry run protection or pump control in conjunction with VEGATOR 256C and VEGATOR 632 signal conditioning instruments.

Advantages
- Economical pump control through multiple cable probe
- High flexibility through shortenable cable probes
- Reduced stockkeeping through exchangeable cable probes

Technical data
Version: partly insulated cable
Probe length: up to 50 m
Process fitting: thread G1½
Materials: 316Ti, PP/FEP
Process temperature: -20 ... +100 °C
Process pressure: -1 ... +6 bar (-100 ... +600 kPa)
### Approval

<table>
<thead>
<tr>
<th>X</th>
<th>Without</th>
</tr>
</thead>
</table>

### Number of cables

<table>
<thead>
<tr>
<th>2</th>
<th>with 2 cable electrodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>with 3 cable electrodes</td>
</tr>
<tr>
<td>4</td>
<td>with 4 cable electrodes</td>
</tr>
<tr>
<td>5</td>
<td>with 5 cable electrodes</td>
</tr>
</tbody>
</table>

### Material cables and gravity weight

<table>
<thead>
<tr>
<th>VAK</th>
<th>316Ti</th>
</tr>
</thead>
</table>

### Line break monitoring

<table>
<thead>
<tr>
<th>X</th>
<th>without</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Line break monitoring for VEGATOR 631</td>
</tr>
<tr>
<td>M</td>
<td>Line break monitoring for VEGATOR 632</td>
</tr>
</tbody>
</table>

### EL6

---

### L1 in mm (longest)

316Ti/FEP insulated (220-50000 mm) per 1000 mm

### L2 in mm (shortest)

316Ti/FEP insulated (220-50000 mm) per 1000 mm

### L3 in mm

316Ti/FEP insulated (220-50000 mm) per 1000 mm

### L4 in mm

316Ti/FEP insulated (220-50000 mm) per 1000 mm

### L5 in mm

316Ti/FEP insulated (220-50000 mm) per 1000 mm
EL 8

Conductive rod electrode

Application area
The rod electrode EL 8 is a universal level switch for conductive liquids. The instrument is ideal as overfill or dry run protection in conjunction with VEGATOR 256C and VEGATOR 632 signal conditioning instruments.

Advantages
- Price-favourable level detection
- Simple installation in narrow space applications through small sensor dimensions

Technical data
Version: partly insulated rod
Probe length: up to 1 m
Process fitting: thread G½
Materials: 316Ti, PE
Process temperature: -10 ... +60 °C
Process pressure: -1 ... +6 bar (-100 ... +600 kPa)

Approval
.X Without ....................................................................................................................................................

Number of rods
1 with 1 rod electrode ............................................................................................................................

Rod material
VEG 316Ti ........................................................................................................................................

EL8

Rod length in mm
316Ti (27-3000 mm) per 250 mm

Isulat. length in mm
ISOLATION
### VEGATOR 256C

**Signal conditioning instrument for conductive electrodes**

**Application area**
The VEGATOR 256C is a signal conditioning instrument for conductive electrodes. Applications are simple level detections or pump controls in conjunction with conductive electrodes EL 1 … EL 8.

**Advantages**
- Compact unit of voltage supply and processing of a conductive probe
- Simple adjustment of the switching point via a potentiometer
- Simple installation through carrier rail mounting

**Technical data**
- **Input:** 1 x level detection or 1 x pump control
- **Output:** 1 x relay output
- **Response sensitivity:** 1 … 200 kOhm adjustable
- **Switching hysteresis:** approx. 20%
- **Operating voltage:** 20 … 250 V AC, 50/60 Hz
- **Mounting:** wall or carrier rail 35 x 7.5 acc. to EN 50022

**Operating voltage**

- E 24VAC
- B 100...130VAC
- A 200...250VAC

**TOR256C.X**
VEGATOR 632

Signal conditioning instrument for conductive electrodes

Application area
The VEGATOR 632 is a double channel signal conditioning instrument for conductive electrodes type EL. Applications are level detections and pump controls. In conjunction with multiple rod or cable electrodes several VEGATOR 632 can be combined with the probe.

Advantages
- Two independent level detections or one min./max. control (two-point control)
- Integrated fault monitoring with LED indication detects shortcircuit and line break
- Simple mounting through carrier rail

Technical data
Input: double channel
Output: 2 x relay output
Switching hysteresis: adjustable
Response sensitivity: adjustable (max. 200 kOhm)
Operating voltage: 85 ... 253 V AC, 50/60 Hz or 20 ... 30 V AC, 50/60 Hz, 20 ... 60 V DC
Mounting: carrier rail 35 x 7.5 acc. to EN 50022

Approval
XX without

Version
D 20...30V AC / 20...60V DC
A 90...250V AC