



NIVOCONT

CONDUCTIVE LEVEL SWITCHES



OUR PROFESSION IS YOUR LEVEL

LEVEL SWITCHES

APPLICATION

Level switches, based on the conductivity principle, can be applied to liquids with conductivity higher than $10 \mu S/cm$. For detecting the level, probes are immersed into the tank. These probes (and the tank wall if conductive) serve as contacts of an electric circuit. Probes can be of single or multiple rod versions. A maximum of 4 probe-rods can fit in the multiple probe with an additional reference probe if tank wall is not conductive. The probe length should be in accordance with the level to be detected. Filling liquid in the tank will change the electrical conductivity between tank wall (or the reference probe) and probes. The established connection will be converted and will activate a relay providing for output.

VERSIONS

| Level switch and probe | Compact level switch |
|--|--|
| <ul style="list-style-type: none"> DIN rail mounted, 1 or 2 channel switching unit Probe set with aluminum or plastic housing featuring 1 1/2" BSP process connection Probe-rods up to 3m | <ul style="list-style-type: none"> 1 or 2 channel switching unit in plastic housing with 1 1/2" BSP process connection Probe-rods up to 3m |

MAIN FEATURES

| Level Switches | | Probe and relay in one unit |
|--|--|--|
| KRK-512 | KRK-522 | KKH-2□2 |
| <ul style="list-style-type: none"> Level switching Filling-emptying control Selectable NO/NC relay function Adjustable sensitivity Adjustable delay time, Adjustable delay ON and delay OFF time Delay time display AC/DC versions | <ul style="list-style-type: none"> 2 independent relay outputs for 1 level 2 independent relay outputs for 2 independent levels 2 relay outputs for pump control Selectable NO/NC relay function Adjustable delay ON and delay OFF time Adjustable sensitivity AC/DC versions | <ul style="list-style-type: none"> Probe and relay in one unit 1 or 2 independent relay outputs for pump control or differential level switching Selectable NO/NC relay function Switch on/off delay Adjustable sensitivity AC/DC versions Delay time display Adjustable delay ON and delay OFF time |

PROBES

Single probe socket

KS□-201

Submersible probe

KSK-201

Multi probe socket

KSH-2□□

KSH-3□□

ACCESSORIES

Probe

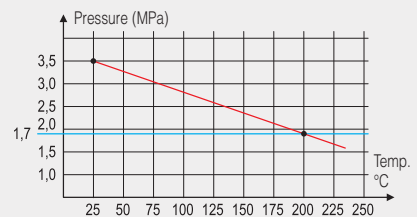
KLN-2□□
Material: 1.4571

Separator

KLP-201
Material: PP

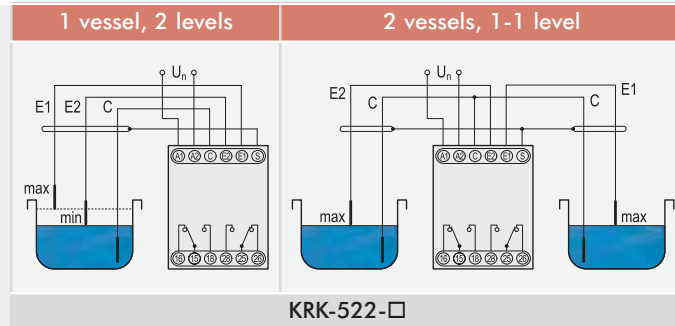
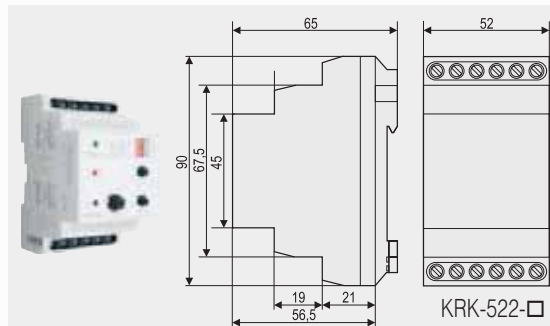
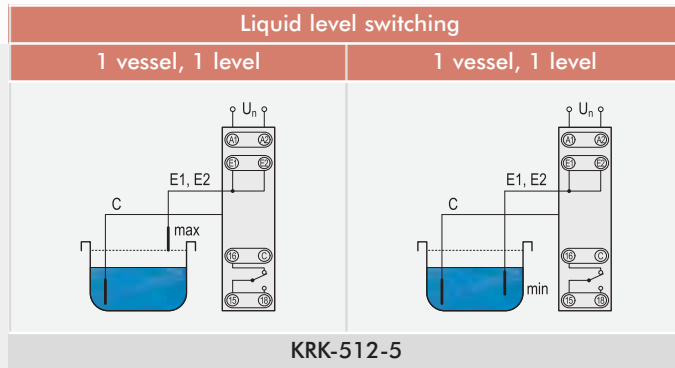
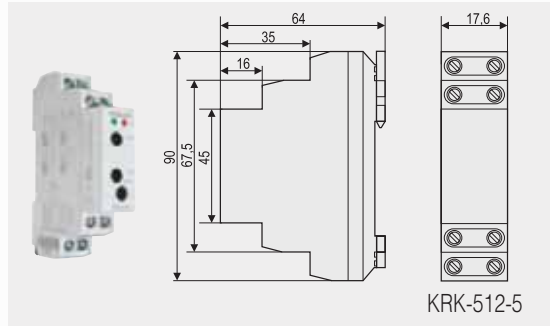
KLP-204
Material: PVDF

DERATING DIAGRAM

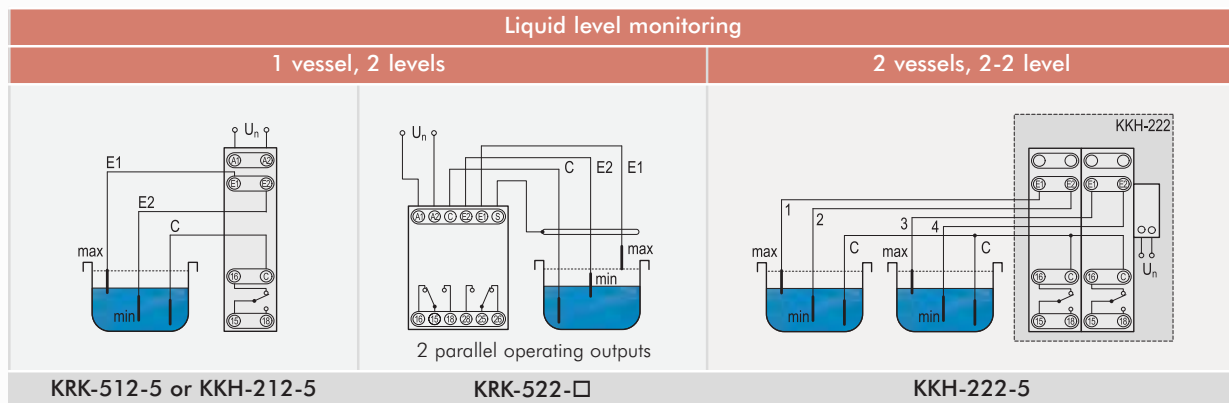
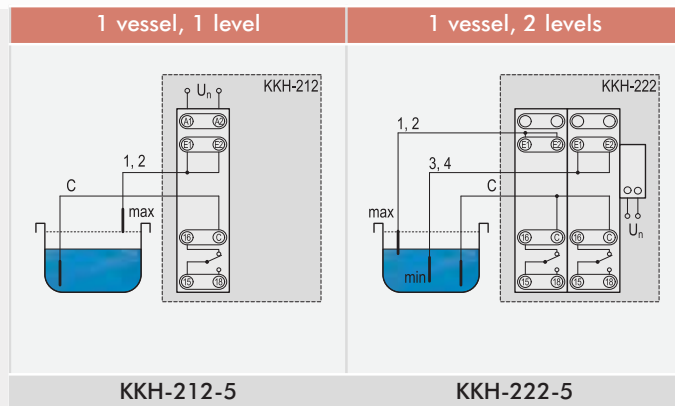
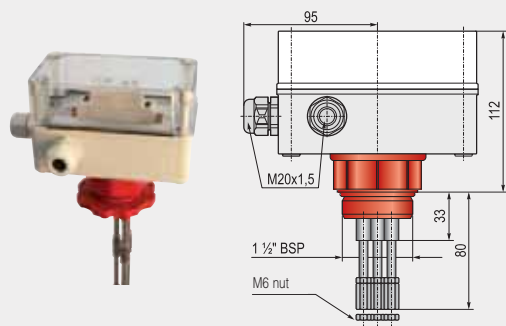


Maximum allowed pressure-temperature values for steel probe socket

LEVEL SWITCHES



COMPACT LEVEL SWITCHES



KRK switches:

A1, A2power supply
 Creference probe
 E1upper level probe
 E2bottom level probe

Scable shielding*
 15, 16, 181st relay output
 25, 26, 282nd relay output

* Mind the right connection

KKH compact level switches:

Unpower supply (KKH-222)
 A1, A2power supply (KKH-212)
 Creference probe

1, 2, 3, 4probe-rods
 15, 16, 18relay output

SPECIFICATION

| Probes | Single Probe | | | Multi Probe | | | | | | | Submersible |
|-----------------------|-----------------|-------------------------------------|---------|---------------------|---------|---------|-----------------|---------|---------|---------|-----------------------|
| | | | | Aluminum housing | | | Plastic housing | | | | |
| | KSP-201 | KSS-201 | KSN-201 | KSH-202 | KSH-203 | KSH-204 | KSH-301 | KSH-302 | KSH-303 | KSH-304 | |
| Number of probes | 1 | | | 2+s* | 3+s* | 4+s* | 1+s* | 2+s* | 3+s* | 4+s* | 1 |
| Process connection | 3/8" BSP | | | 1 1/2" BSP | | | | | | | with integrated cable |
| Probe socket material | PP | carbon steel | 1.4571 | 1.4571 | | | PP | | | | - |
| Housing | - | | | Aluminium cast | | | | PBT | | | ABS |
| Insulation of socket | - | PFA | | | - | | | | - | | |
| Medium temperature | max. +80 °C | max. +200 °C (see Derating Diagram) | | | | | max. +80 °C | | | | |
| Pressure max. | max. 0,3 MPa | max. 1,6 MPa | | | | | max. 0,3 MPa | | | | |
| Electrical connection | with rubber cap | | | M20x1,5 cable gland | | | | | | | Pg9** |
| Ingress protection | IP 20 | | | IP 65 | | | | | | | IP 68 |
| Mass (w.o. probe) | 0,1 kg | | | 0,4 kg | | | | | | | 0,04 kg |

*s = reference probe

** cable diameter: Ø 4...7 mm

ORDER CODES

Level Switches

Single channel

NIVOCONT KRK-512-■

| Power supply | Code |
|--------------------|------|
| 24...240 V AC / DC | 5 |

Double channel

NIVOCONT KRK-522-■

| Power supply | Code |
|--------------|------|
| 230 V AC | 1 |
| 110 V AC | 2 |
| 24 V AC / DC | 4 |

Compact Level Switches

NIVOCONT KKH-2■ 2-■

| Function | Code | Power supply | Code |
|-----------|------|--------------------|------|
| 1 channel | 1 | 24...240 V AC / DC | 5 |
| 2 channel | 2 | | |

Separator

NIVOCONT KLP-204 For aluminum housing probes
 NIVOCONT KLP-201 For plastic housing probes and compact level switches

Probe (not all combinations available)

NIVOCONT KS■ - ■ 0■

| Type | Code | Housing | Code | No. of Probes | Code |
|-----------------------------------|------|----------|------|--------------------|------|
| Single probe, PP socket | P | Aluminum | 2 | 1 pc + ref. probe | 1* |
| Single probe, carbon steel socket | S | Plastic | 3 | 2 pcs + ref. probe | 2 |
| Single probe, 1.4571 | N | | | 3 pcs + ref. probe | 3 |
| Housing | H | | | 4 pcs + ref. probe | 4 |
| Submersible | K | | | | |

* Only with plastic housing

Probe

NIVOCONT KLN-2■ ■

| Length | Code | Length | Code |
|--------|------|--------|------|
| 0 m | 0 | 0 m | 0 |
| 1 m | 1 | 0,5 m | 5 |
| 2 m | 2 | | |
| 3 m | 3 | | |

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SPECIFICATIONS

LEVEL SWITCHES

| | KRK-512-5 | KRK-522-□ |
|----------------------------------|---|--|
| Power supply (U _n) | (galvanic isolation) 24...240 V AC/DC | 110, 24 V AC/DC |
| | -15...+10% | |
| Power consumption | max. 2 VA / W | max. 4,5 VA / W |
| Ambient temperature | -20 °C...+55 °C | |
| Probe voltage | 3,5 V AC | 5 V AC |
| Probe current | max. 0,2 mA | max. 1 mA |
| Sensitivity | Adjustable: 5 kOhm...100 kOhm | |
| Cable capacitance | 100 nF (100 kOhm sens.) 800 nF (5 kOhm sens.) | max. 4 nF |
| Fixed on-delay (t ₁) | 1,5 sec | - |
| On and off-delay | 0,5...10 sec | |
| Output | 1x SPDT 250 V 8A, AC1 24 V DC min. 500 mW | 2x SPDT 250V 16A, AC1 24 V DC min. 500 mW |
| Electrical connection | terminal block, max. 2,5 mm ² with insulation 1,5 mm ² | |
| Electrical protection | Class II. | Class II. Class II. |
| Mechanical connection | DIN EN 60715 rail | |
| Ingress protection | IP 20 | |
| Mass | 72 g | 240 g |

COMPACT LEVEL SWITCHES

| | KKH-212-5 | KKH-222-5 |
|--------------------------------|--|--------------------------------|
| Power supply (U _n) | 24 V...240 V AC/DC | |
| | -15...+10% | |
| Power consumption | max. 2 VA / W | max. 4 VA / W |
| Ambient temp. | -20 °C...+50 °C | |
| Process temperature | max. +80 °C | |
| Pressure | 1 bar | |
| Number of probes | 2+s* | 4+s* |
| Probe voltage | 3,5 V AC | |
| Probe current | max. 0,2 mA | max. 0,4 mA |
| Sensitivity | Adjustable: 5 kOhm...100 kOhm | |
| Fixed on-delay | 1,5 sec | |
| On and off-delay | 0,5...10 sec | |
| Output | 1x SPDT 250 V 8A, AC1 | 2x SPDT 250V 16A, AC1 |
| Electrical connection | 2x M20x1,5 for Ø6...12 mm cables, terminal block max. 2,5 mm ² / with insulation 1,5 mm ² | |
| Electrical protection | Class II. | |
| Process connection | 1 1/2" BSP | |
| Probe socket material | PP | |
| Housing material | Polycarbonate | |
| Ingress protection | IP 67 | |
| Mass | 660 g (without probe stems) | 800 g (without probe stems) |

*s = reference probe

OPERATION

