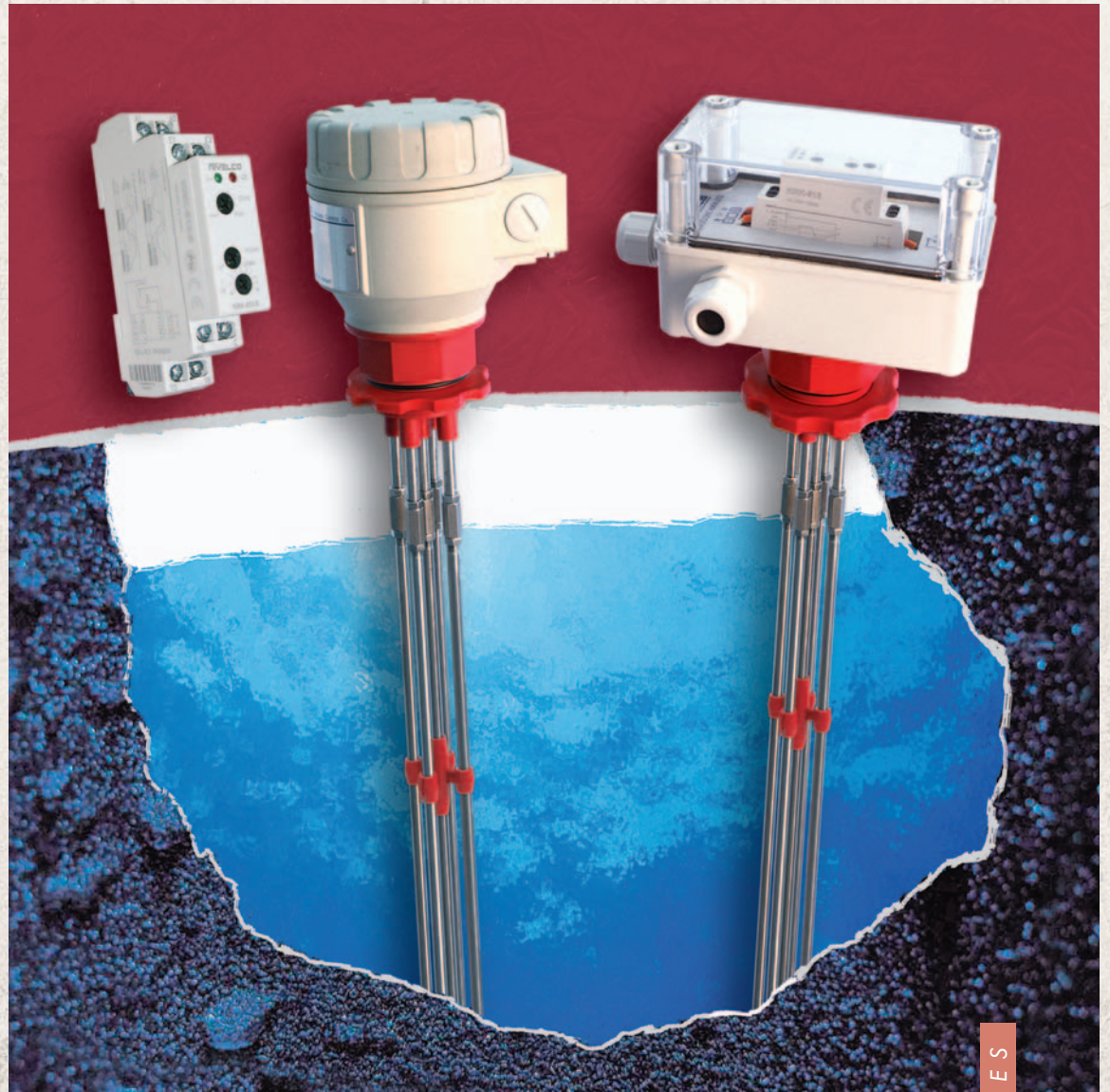




NIVOCONT

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

KSK-201

Submersible probe

KSK-201

Multi probe socket

KSH-2□□

KSH-3□□

ACCESSORIES

Probe

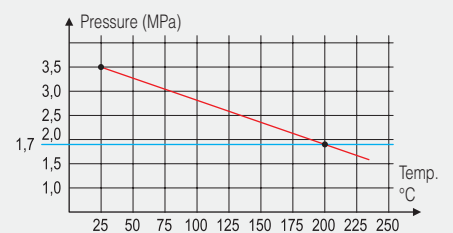
KLN-2□□
Material: 1.4571

Separator

KLP-201
Material: PP

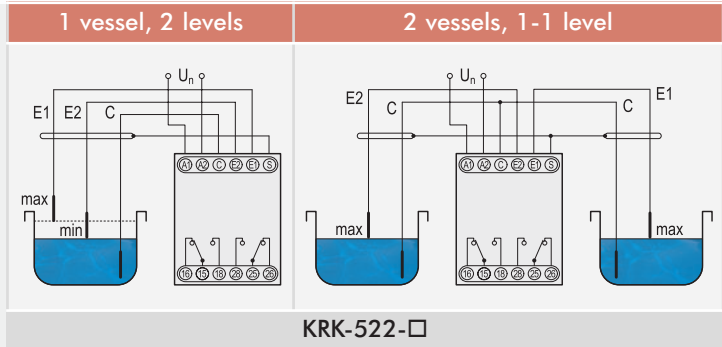
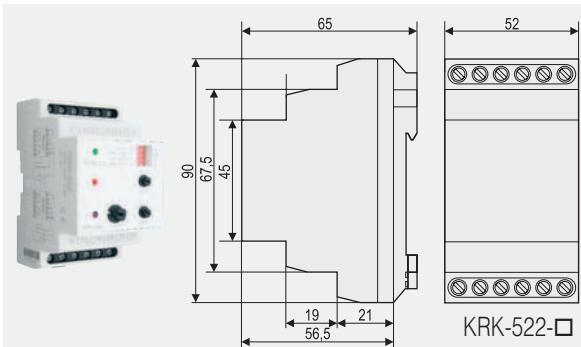
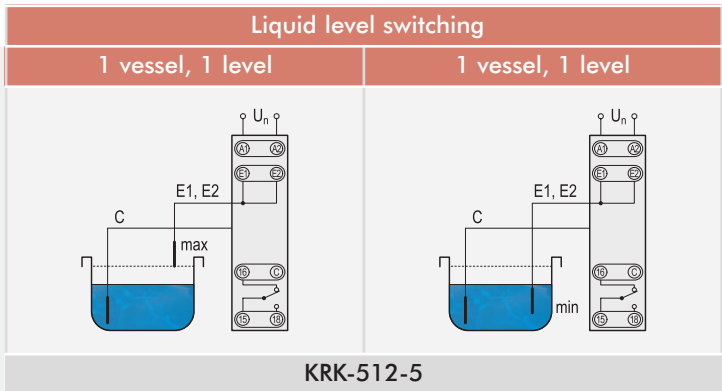
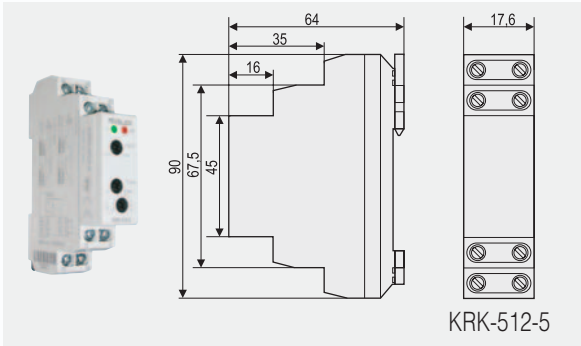
KLP-204
Material: PVDF

DERATING DIAGRAM

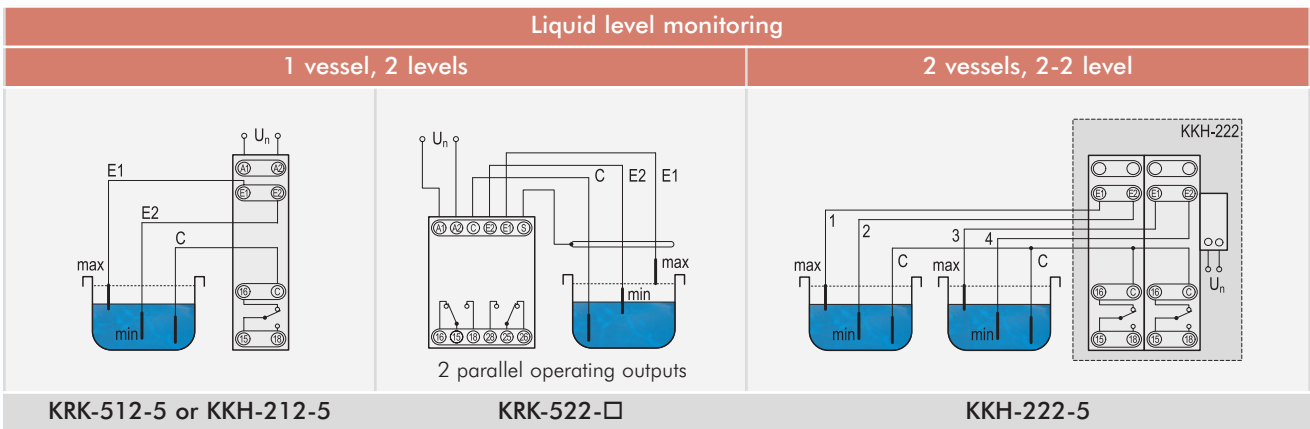
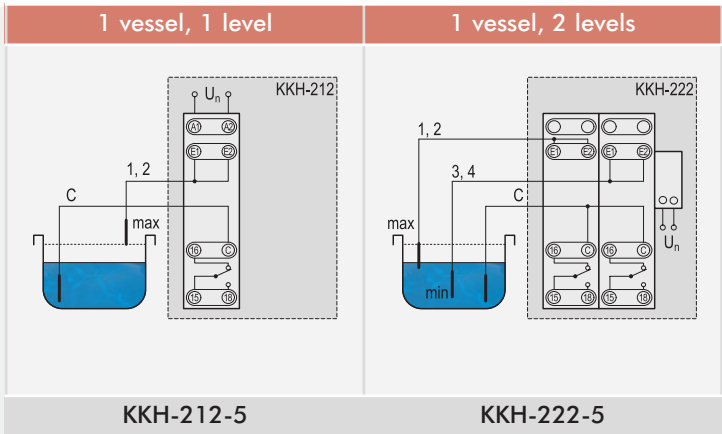
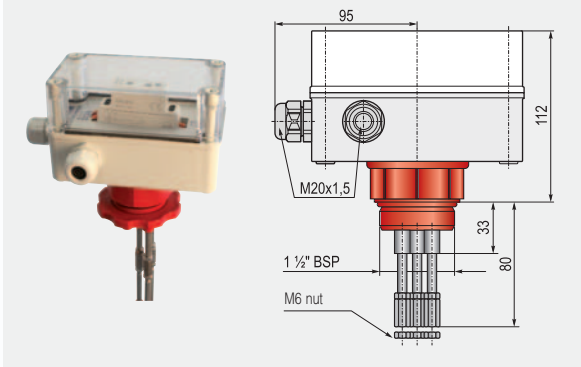


Maximum allowed pressure-temperature values for steel probe socket

LEVEL SWITCHES



COMPACT LEVEL SWITCHES



KRK switches:

- A1, A2 power supply
 - C reference probe
 - E1 upper level probe
 - E2 bottom level probe
 - S cable shielding*
 - 15, 16, 18 1st relay output
 - 25, 26, 28 2nd relay output
- * Mind the right connection

KKH compact level switches:

- Un power supply (KKH-222)
- A1, A2 power supply (KKH-212)
- C reference probe
- 1, 2, 3, 4 probe-rods
- 15, 16, 18 relay 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		

SPECIFICATIONS LEVEL SWITCHES

	KRK-512-5	KRK-522-□
Power supply (U _n)	(galvanic isolation) 24...240 V AC/DC -15...+10%	110, 230 V AC 24 V AC/DC
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

