



Instrumentação
e Controle

Catálogo



NIVETEC INSTRUMENTAÇÃO E CONTROLE LTDA

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NIVOCONT K

CONDUCTIVE LEVEL SWITCHES



NIVETEC

LEVEL SWITCHES



GENERAL DESCRIPTION

NIVOCONT K level switches, based on the conductivity principle, can be applied to liquids with conductivity higher than 10 $\mu\text{S}/\text{cm}$. For detecting the level, probes are immersed into the medium. 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 socket with an additional reference probe if tank wall is not conductive. The probe length should be in accordance with the level to be detected. When the liquid level reaches the probe, it will create a change in the conductivity of the loop and the output relay will be activated. The device senses the conductivity difference between the probes and the reference probe. The KLP separators should be used at every 0.5 m to provide appropriate distance between the probes.

MAIN FEATURES

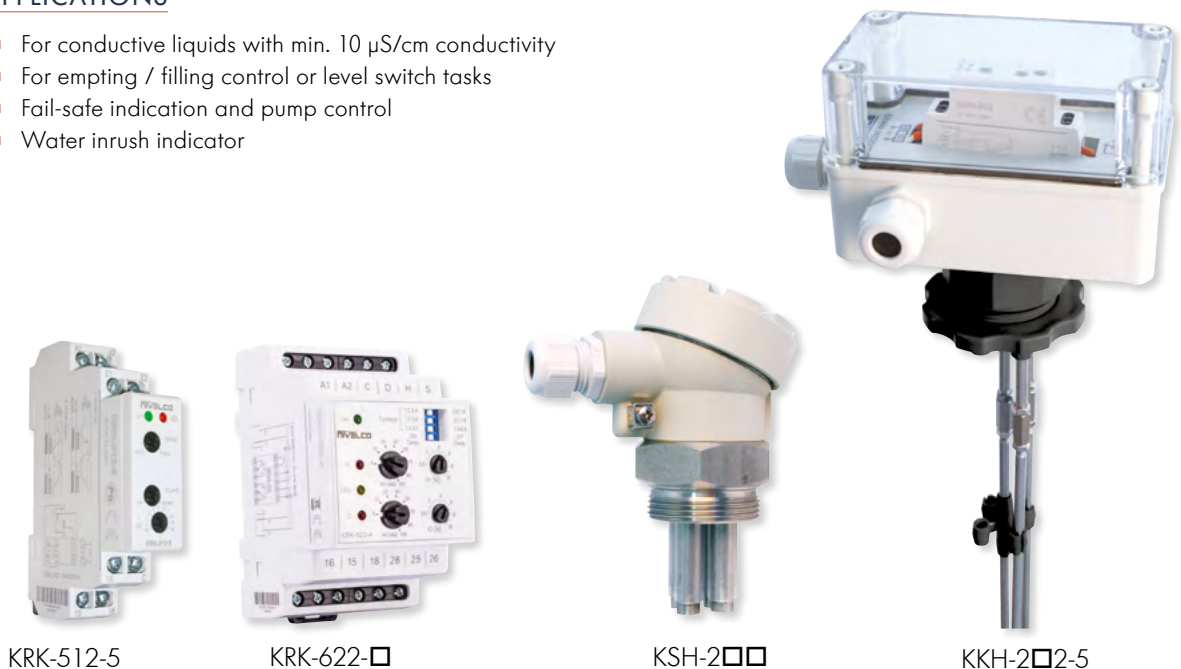
Level switches		Compact level switches
KRK-512	KRK-622	KKH-2□2
<ul style="list-style-type: none"> ■ Level switching ■ Filling-emptying control ■ Selectable NO/NC relay function ■ Adjustable sensitivity ■ Adjustable ON/OFF delay ■ Delay time indication ■ AC/DC versions 	<ul style="list-style-type: none"> ■ The following functions can be selected: <ul style="list-style-type: none"> – Monitoring of 2 independent levels in 2 tanks – Monitoring of 2 independent levels in 1 tanks – Pumping from one tank to another ■ DIP switch selection on the front panel (8 functions) ■ Adjustable sensitivity (for each probe separately) ■ Adjustable relay switching delay (for each probe separately) ■ AC/DC versions 	<ul style="list-style-type: none"> ■ Probe and relay in one unit ■ 1 or 2 incorporated KRK-512 electronics ■ 1 or 2 independent relay outputs for pump control or differential level switching ■ Selectable NO/NC relay function ■ Adjustable sensitivity ■ Adjustable ON/OFF delay ■ Delay time indication ■ AC/DC versions

VERSIONS

Level switch and probe	Compact level switch
<ul style="list-style-type: none"> ■ DIN rail mounted 1 or 2 channel switching unit ■ Probe socket with aluminium or plastic housing featuring 1½" BSP process connection ■ Probe-rods up to 3 m (9.84 ft) 	<ul style="list-style-type: none"> ■ 1 or 2 channel switching unit in plastic housing with 1½" BSP process connection ■ Probe-rods up to 3 m (9.84 ft) 

APPLICATIONS

- For conductive liquids with min. 10 $\mu\text{S}/\text{cm}$ conductivity
- For emptying / filling control or level switch tasks
- Fail-safe indication and pump control
- Water inrush indicator



KRK-512-5

KRK-622-□

KSH-2□□

KKH-2□□-5

TECHNICAL DATA

Features	Probes			Multi Probe						Submersible	
	Single Probe			Aluminium housing			Plastic housing				
	KSP-201	KSS-201	KSN-201	KSH-						KSK-201	
			202	203	204	301	302	303	304		
Number of probes	1			2+s*	3+s*	4+s*	1+s*	2+s*	3+s*	4+s*	1
Process connection	¾" BSP			½" BSP						Cable mountable	
Probe socket material	PP	Carbon steel	1.4571 (316Ti)			PP			-		
Housing	-			Aluminium cast			PBT			ABS	
Probe material	1.4571 (316Ti)									1.4401 (316)	
Insulation of socket	PP	PFA			PP			ABS			
Medium temperature	max. +80 °C (176 °F)	max. +200 °C (392 °F)			max. +80 °C (176 °F)						
Pressure max	max. 0.3 MPa (3 bar)	max. 1.6 MPa (16 bar [232 psig])			max. 0.3 MPa (3 bar [43.5 psig])			-			
Electrical connection	With rubber cap			M20x1.5 cable gland, cable diameter: Ø6 – 12 mm (Ø0.2 – 0.5 inch)						Pg7 ⁽¹⁾	
Ingress protection	IP20			IP65			IP67			IP68	
Mass (without probe)	0.1 kg (0.22 lb)			0.4 kg (0.88 lb)			0.2 kg (0.44 lb)			0.05 kg (0.11 lb)	

s* = reference probe ⁽¹⁾ Cable: Ø4 – 7 mm (Ø0.16 – 0.27 inch)

Features	Type	Level switches		
		KRK-512-5	KRK-622-1 KRK-622-2	KRK-622-4
Power supply (U _n)	24 – 240 V AC/DC (AC 50 – 60 Hz)	110 V AC, 230 V AC	24 V AC/DC	
	-15% ... +10%			
Power consumption	Max. 2 VA	2.5 W / 5 VA	1.4 W / 2 VA	
Ambient temperature	-20 °C ... +55 °C (-4 °F ... +131 °F)			
Probe voltage	Max. 3.5 V AC			
Probe current	Max. 0.1 mA AC	Max. 1 mA AC		
Sensitivity	Adjustable: 5 – 100 kΩ			
Cable capacitance	100 nF (100 kΩ sensitivity) 800 nF (5 kΩ sensitivity)			
Fixed ON delay	1.5 sec	-		
ON/OFF delay	0.5 – 10 sec			
Relay output	1x SPDT 250 V 8 A, AC1 24 V DC 8 A	2x SPDT 250 V 16 A, AC1 24 V DC 16 A		
Electrical connection	Terminal block, max. 2.5 mm ² (0.98 inch)			
Electrical protection	Class II		Class III	
Mechanical connection	EN 60715 rail			
Ingress protection	IP20			
Mass	72 g (0.16 lb)	248 g (0.55 lb)	147 g (0.32 lb)	

Features	Type	Compact level switches	
		KKH-212-5	KKH-222-5
Power supply (U _n)	24 – 240 V AC/DC (AC 50 – 60 Hz)	-15% ... +10%	
Power consumption	Max. 2 VA	Max. 4 VA	
Ambient temperature	-20 °C ... +50 °C (-4 °F ... +122 °F)		
Medium temperature	-20 °C ... +80 °C (-4 °F ... +176 °F)		
Medium pressure	1 bar		
Number of probe	2+s*	4+s*	
Probe voltage	Max. 3.5 V AC		
Probe current	Max. 0.1 mA		
Sensitivity	Adjustable: 5 – 100 kΩ		
Fixed ON delay	1.5 sec		
ON/OFF delay	0.5 – 10 sec		
Relay output	1x SPDT 250 V 8 A AC1 / DC 24 V 8 A	2x SPDT 250 V 8 A, AC1 / DC 24 V 8 A	
Electrical connection	Cable gland: 2x M20x1.5 Ø6 – 12 mm cables, Terminal block, max. 2.5 mm ² (0.98 inch)		
Electrical protection	Class II		
Process connection	½" BSP		
Material of probe socket	PP		
Housing material	Polycarbonate		
Ingress protection	IP67		
Mass (without probe)	660 g (1.45 lb)	800 g (1.76 lb)	

s*=reference probe

PROBES, ACCESSORIES



KSK-201
Single probe socket



KSK-201
Submersible probe



KLN-200
Probe

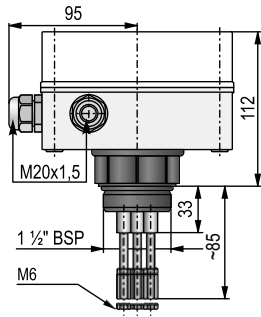


KLP-201-0 Separator for
KSH-300 and KKH-200

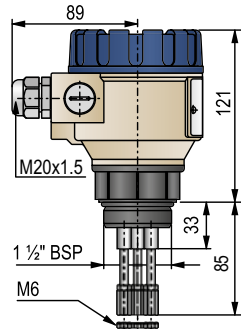


KLP-204-0
Separator for KSH-200

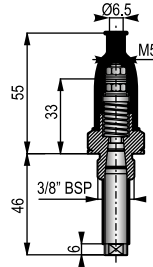
DIMENSIONS (MM)



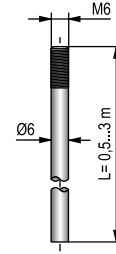
KKH-2□2-5



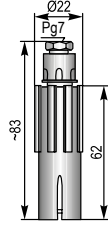
KSH-303



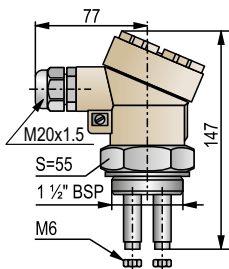
KS□-201



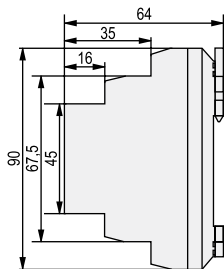
KLN-200



KSK-201



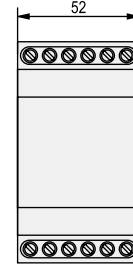
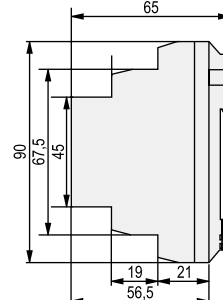
KSH-202



KRK-512-5



KRK-622-□



ORDER CODES (NOT ALL COMBINATIONS AVAILABLE)

Level switches

Single channel

NIVOCONT KRK-512-□

Power supply	Code
24 - 240 V AC / DC	5

Double channel

NIVOCONT KRK-622-□

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
Single channel	1	24 - 240 V AC / DC	5
Double channel	2		

Separators

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

Probe

NIVOCONT KS □ - □ 0

Type	Code	Housing	Code	Number of probes	Code	
Single probe	PP socket	P	Metal	2	1 pc	1 ⁽¹⁾
	carbon steel socket	S	Plastic	3	2 pcs	2
	1.4571	N		3 pcs	3	
Housing	H			4 pcs	4	
Submersible	K					

Probe

NIVOCONT KLN-2 □ □

Length ⁽²⁾	Code	Length	Code
0 m (0 in)	0	0 m	0
1 m (3.2 ft)	1	0.5 m (1.64 ft)	5
2 m (6.5 ft)	2		
3 m (10 ft)	3		

⁽¹⁾Only with plastic housing.
⁽²⁾Only available in 0.5 m steps.

