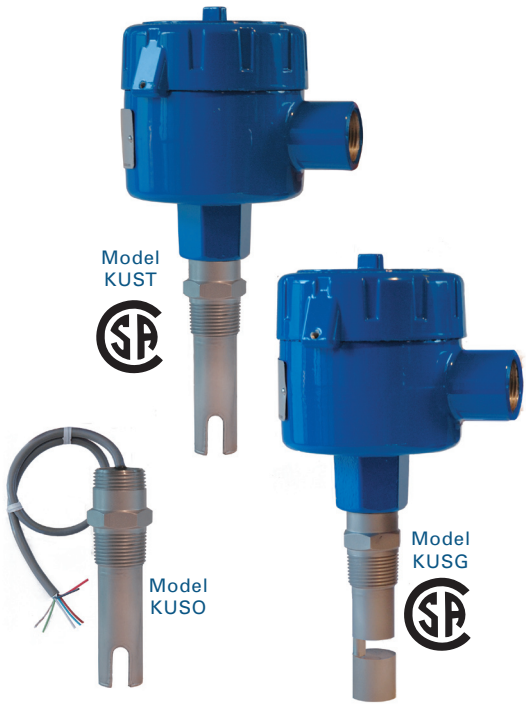
ULTRASONIC LIQUID LEVEL SWITCHES

Ultrasonic liquid level switches are used in a wide variety of applications to detect the location of level in a process or storage vessel. These switches can be used in virtually any liquid. A complete offering of materials and mounting configurations are available to meet your application needs.

FEATURES	BENEFITS OF OWNERSHIP
Not reliant on chemical properties of the liquid	Reliability
No moving parts	Long Life / Low Maintenance
No calibration necessary	Simplified installation
A wide variety of materials and process connections	Application Flexibility
Remote Self-test to verify operation of the electronics and sensor (Model KUSG)	Peace of Mind



APPLICATIONS

Oils & other Hydrocarbons
Solvents
Water
Acids
Caustics
Condensate
Clean Liquids

INDUSTRIES

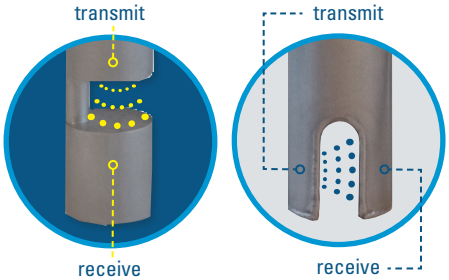
Chemical
Petroleum
Water / Wastewater
Pharmaceutical
Pulp & Paper
Power
Aerospace

PRINCIPLE OF OPERATION

Ultrasonic switches use piezoelectric crystals to transform electrical energy into mechanical motion (sound). The Transmit Crystal sends a pulse of sound through the space between the crystals, to the Receive Crystal. If the space is filled with air, gas, or vacuum, the Receive Crystal does not detect the sound pulse. However, if the space is filled with liquid, ***any liquid***, the pulse is detected by the Receive Crystal, and the switch output changes.

The Model KUST and KUSG are designed for industrial applications requiring hazardous-area approval. The Model KUSG contains a remote-test feature that allows you to test the operation of the switch and sensor on-demand. The Model KUSO is a low-cost alternative for OEM's (Original Equipment Manufacturers) not requiring hazardous-area certification.

GAP STYLE
Model KUSG



TIP STYLE
Model KUSO
Model KUST

MODEL CONFIGURATION

KUST -□-□-□-□-□-□-□-□

- Input Power
- Output
- Switch Mounting
- Sensor Material
- Sensor Length
- Process Connection
- Flange Size
- Flange Material

Input Power

Description	Code
115Vac	1
230Vac	2
24Vdc	3
12Vdc	4

Output

Description	Code
10A DPDT	1
Two-wire	2

Switch Mounting

Description	Code
Integral	1
*Remote	2

*Remote 10ft. (std.)
100ft. (max)

Sensor Material

Description	Code
316 SS	S
Tefzel®	T

Sensor Length

Description	Code
Standard (2.25″)	00
*Inches (3″–120″)	XXX

*316 SS Sensor Only

Process Connection

Description	Code
3/4″ NPT	1
150# Flange	F
300# Flange	H
Sanitary Flange	S

Flange Size

Description	Code
None	
1-1/2″	0
1	1
2	2
3	3

Flange Material

Description	Code
None	
Carbon Steel	A
316 SS	S

KUSG -□-□-□-□-□-□-□-□

- Input Power
- Output
- Switch Mounting
- Sensor Material
- Sensor Length
- Process Connection
- Flange Size
- Flange Material

Input Power

Description	Code
115Vac	1
230Vac	2
24Vdc	3
12Vdc	4

Output

Description	Code
10A DPDT	1

Switch Mounting

Description	Code
Integral	1
*Remote	2

*Remote 10ft. (std.)
100ft. (max)

Process Connection

Description	Code
3/4″ NPT	1
150# Flange	F
300# Flange	H
Sanitary Flange	S

Sensor Material

Description	Code
316 SS	S
Monel®	M
Hastelloy B®	HB
Hastelloy C®	HC
Teflon®	T
Kynar®	K
CPVC	C

Sensor Length

Description	Code
Standard (1″)	00
Inches (2″–120″)	XXX

Flange Size

Description	Code
None	
1-1/2″	0
1	1
2	2
3	3

Flange Material

Description	Code
None	
Carbon Steel	A
316 SS	S
Hastelloy C®	HC
CPVC	C
Kynar®	K
Teflon®	T

KUSO-□-□

- Style
- Enclosure

Style

Description	Code
1A SPDT 316 SS	0
1A SPDT Tefzel®	1
2-wire 316 SS	2
2-wire Tefzel®	3

Enclosure

Description	Code
None	
NEMA 7	E

PRODUCT SPECIFICATIONS

Model KUST

Description		Specification
Input Power	AC	115Vac or 230Vac; 50/60Hz
	DC	12 or 24Vdc
	DC (Two-Wire)	9-30Vdc
Output	Relay	10A DPDT
	Two-wire (Isolated)	4mA = Dry; 20mA = Wet
Temperature Range	Electronics	-20°F to 170°F
	Sensor	-40°F to 300°F
Pressure Range	316 SS	Vacuum to 1000psig
	Tefzel®	Vacuum to 100psig
Sensitivity (Signal-to-noise Ratio)		500:1
Repeatability		±2mm
Response Time		0.5 sec. fixed

Model KUSG

Description		Specification
Input Power	AC	115Vac or 230Vac; 50/60Hz
	DC	12 or 24Vdc
Output		10A DPDT
Temperature Range	Electronics	-20°F to 170°F
	Sensor (Metal)	-40°F to 300°F
Pressure Range	Metal Sensors	Vacuum to 1000psig
	Non-metal Sensors	Vacuum to 100psig
Sensitivity (Signal-to-noise Ratio)		1000:1
Repeatability		±2mm
Response Time		0.5 sec. fixed

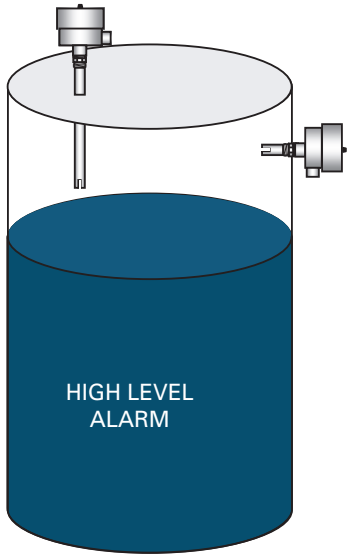
Model KUSO

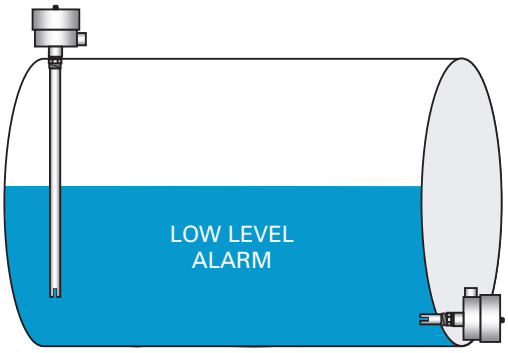
Description		Specification
Input Power	DC	6 – 24Vdc, 5Vdc (Optional)
Output	Relay	1A SPDT
	Two-wire (Isolated)	4mA = Dry; 16mA = Wet
Temperature Range		-20°F to 160°F; up to 212°F (Special)
Pressure Range	316 SS	Vacuum to 1000psig
	Tefzel®	Vacuum to 100psig
Cable Length		12"; For longer lengths consult factory
Mounting		3/4" NPT; For flanges consult factory
Sensitivity (Signal-to-noise Ratio)		500:1
Repeatability		±2mm
Response Time		0.5 sec. fixed

AGENCY APPROVAL

Agency	Models	Protection Method	Approval
CSA	KUST-X-1-X-S-X-X-X-X	Explosion-proof	Explosion-proof for: Division 1 Class I – Groups C , D; Class II – Groups E, F, G; Class III
	KUSG-X-1-X-S-X-X-X-X KUSG-X-1-X-M-X-X-X-X KUSG-X-1-X-HC-X-X-X-X KUSG-X-1-X-HB-X-X-X-X		
	KUST-X-2-X-S-X-X-X-X	Intrinsically Safe	Intrinsically Safe for: Division 1 Class I – Groups A, B, C, D; Class II – Groups E, F, G; Class III

APPLICATION EXAMPLES

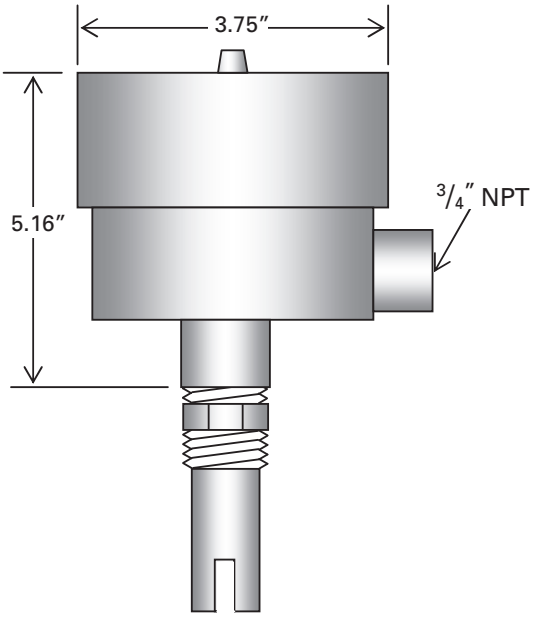


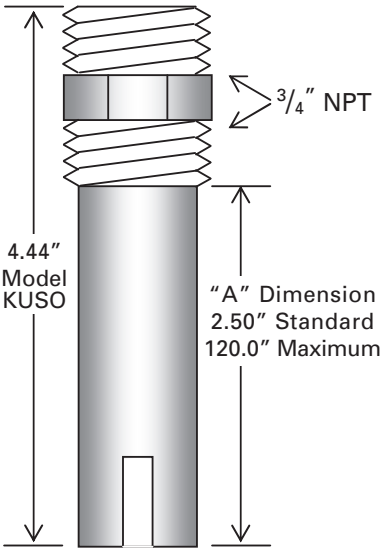


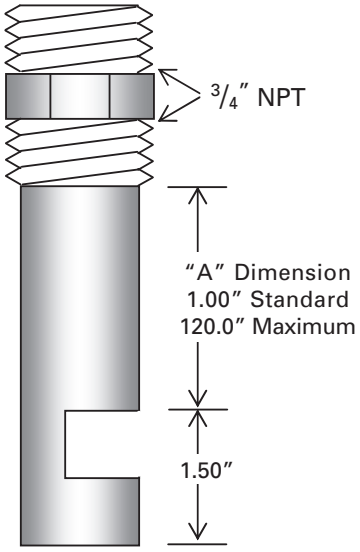
APPLICATIONS:

- Pump Protection
- Storage Tanks
- Compressors
- Hydraulic Supply Lines
- Boiler Water Cutoff
- Sewage Systems
- Pipelines
- Food Processing
- Acids
- Alkalies
- Paints
- Alcohols
- Crude Oil
- Fuels
- Solvents
- Hydrocarbons

DIMENSIONAL DRAWINGS







HOW TO PROCEED

Selecting a Kenco Ultrasonic Switch for your application is a snap!

1. Contact your local Kenco Engineering Representative.
2. Discuss your application.
3. Request a quote

An experienced Applications Engineer will evaluate your application, and select the best switch to meet your needs.

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