NC MAGNETIC FLOAT SWITCHES FOR LIQUIDS



Flow Pressure Level Temperature measurement monitoring control



Contact: Industrial Pr

Industrial Process Measurement, Inc. 3910 Park Avenue, Unit 7 Edison, NJ 08820 732-632-6400 support@instrumentation2000.com http://www.instrumentation2000.com Model: NC



HIGH QUALITY LEVEL SWITCHES FOR EVERY APPLICATION

Versatile Design

KOBOLD level switch products are designed to meet a wide range of application requirements by addressing such design considerations as:

- Pressure and Temperature
- Mounting Orientation
- Termination
- Media Characteristics such as Density, Viscosity and Corrosivity
- Materials of Construction
- Switch Load

Operation

All KOBOLD level switches use a hermetically sealed reed contact actuated by a magnet in the float. As the float rises and falls, the magnetic field causes the switch inside the stem to open or close.

KOBOLD level switches can be mounted in the tank top or bottom, or can be adapted for side mounting. Switches will operate normally with up to a 30 degree tilt from vertical.

All single point switches are field selectable for normally open (N/O) or normally closed (N/C) switch operation by simply removing the retaining ring and flipping the float.

Design Flexibility

Some KOBOLD level switches can be provided to detect the interface between two dissimilar liquids such as water and oil.

KOBOLD level switches can be provided with other mounting styles such as flanges, bent stem, different NPT, straight threads, and metric size mounting plugs.

KOBOLD level switches can be made intrinsically safe for hazardous applications by the use of I.S. barriers such as the REL-6000 series. Contact protection relays such as the RL-series should always be considered to protect switches from overload.



Electrical Data

Switch Ratings – Resistive Loads					
Contact Rating Switch Type Maximum Voltage Maximum AC Current DC					
100 VA	SPST	240 VAC/VDC	1.0 A	0.4 A	
20 VA	SPDT	240 VAC/VDC	0.7 A	0.4 A	

NOTE: Above ratings are for resistive loads only.

NC - Magnetic Float Switches for Liquids

NCP SMALL POLYPROPYLENE SWITCHES

Top Mount NCP-2554



of float travel in liquid with a specific gravity of 1.0. 1/8'NPT 1.58 (40mm) 1.00* (25mm) ЦЦ ¢ 1.00*

Top Mount Model NCP-2554

Features

- Small, compact size with small displacement
- Highly reliable, yet inexpensive
- Seamless cellular construction
- Excellent chemical resistance

Side Mount NCP-5094





NCP Ordering Information

Туре	Part No.	Stem/Float Material	Switch
Top Mount	NCP-2554	Polypro/Polypro	20 VA, SPST
Side Mount	NCP-5094	Polypro/Polypro	20 VA, SPST

Specifications

Max. Pressure: 100 PSIG **Temperature Range** Operating: - 40 °F to 225 °F Fittings: 1/8" NPT Leads: 22 AWG×24" Liquid Specific Gravity Minimum: 0.81

Side Mount Model NCP-5094

Features

- Side mount design fits small vessels
- Minimal float travel and displacement.
- Highly chemical resistant

Specifications

Max. Pressure:	40 PSIG
Temperature Range:	– 40 °F to 176 °F
Fittings:	PF 1/4" (1/2"x20)
Leads:	22 AWG×24"
Liquid Specific Grav	ity
Minimum:	0.81

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OBOLD



NCB SMALL BUNA-N SWITCHES

General Purpose NCB-1054 & NCB-1064

Features

- Small, compact size, 1" dia. float
- Precise repeatability
- Reliable, long-life performance
- Highly resistant to shock and vibration
- Buna-N float
- Stems available in 316 SS or Brass



General Purpose NCB-1054 & NCB-1064



Specifications

Max. Pressure:	150 PSIG
Operating Temper	ature Range
In Oil:	- 40 °F to 230 °F
In Water:	– 40 °F to 180 °F
Fittings:	1/8" NPT
Leads:	22 AWG×24"
Liquid Specific Gr	avity
Minimum:	0.55

NCB Ordering Information

Туре	Part No.	Stem/Float Material	Switch
Top Mount	NCB-1054	316 SS/Buna-N	20 VA, SPST
Top Mount	NCB-1064	Brass/Buna-N	20 VA, SPST



NCB GENERAL PURPOSE BUNA-N SWITCHES

Intermediate Size NCB-1000



Large Size NCB-5000



NCB Ordering Information

Туре	Float Size	Part No.	Stem/Float Material	Switch
Top Mount	Intermediate	NCB-1084	316 SS/Buna-N	100 VA, SPST
Top Mount	Intermediate	NCB-1094	Brass/Buna-N	100 VA, SPST
Top Mount	Large	NCB-5124	316 SS/Buna-N	100 VA, SPST
Top Mount	Large	NCB-5134	Brass/Buna-N	100 VA, SPST
Top Mount	Large	NCB-5154	Brass/Buna-N	20 VA, SPST

Subject to change without prior notice.



A - actuation point is approximately midway of float travel in liquid with a specific

 $\phi \frac{1.88^{\circ}}{(47,6mm)}$

1/4 NPT

1.88° (47,6mm)

> 2.70* (68,6mm)

gravity of 1.0.

5/8 HEX

NCB-1000 Intermediate Size

Features

- Highly reliable, yet inexpensive
- Compact, narrow displacement
- Stem available in 316 SS or Brass
- Long operating life

Specifications

Max. Pressure:	150 PSIG			
Operating Temperature Range				
In Oil:	– 40 °F to 230 °F			
In Water:	– 40 °F to 180 °F			
Fittings:	¹ /8 NPT			
Leads:	18 AWG×24			
Liquid Specific Gra	vity			
Minimum:	0.55			

NCB-5000 Large Size

Features

- Large float provides maximum displacement in high viscosity fluids
- Rugged design for heavy duty service

Specifications

Max. Pressure:	150 PSIG				
Operating Temperature Range					
In Oil:	– 40 °F to 230 °F				
In Water:	– 40 °F to 180 °F				
Fittings:	¹ / ₄ NPT				
Leads:	18 AWG×24"				
Liquid Specific Grav	ity				
Minimum:	0.55				

NC - Magnetic Float Switches for Liquids



NCS ALL STAINLESS STEEL SWITCHES For High Corrosive, High Temperature Applications

Small Size Models

Features

- Compact size, 1.1" dia. float
- Long operating life
- Highly resistant to shock and vibration
- All wetted parts 316 SS

Specifications

 Max. Pressure:
 400 PSIG

 Temperature Range:
 - 40 °F to 300 °F

 Fittings:
 ½" NPT

 Leads:
 22 AWG×24"

 Liquid Specific Gravity
 0.77

Model NCS-1074 Small Size





Model NCS Large Size





NCS Ordering Information

Size	Туре	Part No.	Stem/Float Material	Switch
Small	Standard	NCS-1074	316 SS/316 SS	20 VA, SPST
Large	Standard	NCS-1104	316 SS/316 SS	100 VA, SPST
Large	Waterproof - NPT	NCS-7201	316 SS/316 SS	20 VA, SPST
Large	Waterproof – UNF	NCS-7202	316 SS/316 SS	20 VA, SPST

Large NCS Models

Features

- All wetted parts 316 stainless steel
- High resistance to corrosive chemicals
- Operates in high temperatures
- High pressure capable

Specifications

Max. Pressure:	400 PSIG
Temperature Range:	- 40 °F to 300 °F
Fittings	
Typical:	1/4" NPT or
NCS-7202:	1/2"-13 UNF
Leads	
Standard:	18 AWG×2 feet
Waterproof:	18 AWG×10 feet
Liquid Specific Gravi	ty
Minimum:	0.65



NC BENT STEM SIDEMOUNT AND PVC SWITCHES

NCS-5161 and NCB-5171 Sidemount Switches









SS NCS-5161 and Buna-N NCB-5171 Sidemount Switches

Features

- 90° bend allows mounting where access to tank top or bottom is restricted
- 316 SS stem standard
- Floats available in SS or Buna-N
- Long operating life

Specifications

Maximum Pressure	
SS:	275 PSIG
Buna:	150 PSIG
Operating Temperat	ure Range
SS:	– 40 °F to 300 °F
Buna: In Oil:	– 40 °F to 230 °F
In Water:	– 40 °F to 180 °F
Fittings:	PF 1/8" (3/8"-24)
Leads:	22 AWG×11"
Minimum Liquid Spe	cific Gravity
SS:	0.77
Buna:	0.55

Ordering Information

Туре	Part No.	Stem/Float Material	Switch
Side Mount	NCS-5161	316 SS/316 SS	20 VA, SPST
Side Mount	NCB-5171	316 SS/Buna-N	20 VA, SPST



NCG - Custom Level Switches for Liquids

NCG STANDARD MULTIPOINT LEVEL SWITCHES

The KOBOLD Standard Multipoint Level Switches are available in lengths to 96 inches, with switches located as per your instructions.

Stem Choices

Maximum Length: Wetted Parts Stem/Fittings: **Electrical Ratings:**

96" SPST, 100 VA, option: SPDT 20 VA

316 SS or Brass

• Special units available to 10 feet.

Fitting Choice Selection Table

Up to 5 control points per unit

Float Choices

	Wetted Parts:	Buna-N
		Stainless Steel
	Maximum Pressure	
	Buna-N:	150 PSIG
ł	Stainless Steel:	400 PSIG
	PVC:	100 PSIG
	Operating Temperatu	ire
	Buna-N: In Oil:	– 40 °F to 230 °F
	In Water:	– 40 °F to 180 °F
	Stainless Steel:	– 40 °F to 300 °F
	PVC:	– 40 °F to 140 °F
	Minimum Liquid Spe	cific Gravity
	Type 1 Float:	0.65
	Type 2 Float:	0.55
	Type 3 Float:	0.55
	Type 4 Float:	0.85

Switch Geometry



$A = 1^{1}/_{2}$ " minimum distance to highest level

- B = 3" minimum distance between levels
- C = 2" minimum distance from end of unit to lowest level



Float Choice Selection Table



Subject to change without prior notice.



NCG STANDARD MULTIPOINT LEVEL SWITCHES

NCG Ordering Information

NCG-	W = Fitting Type	X = Fitting/ Stem Material	Y = Number of Switch Levels	Z = Float Type & Material	Options	
	W = 1: 1/2" NPT Male	X = 1: Brass/Brass	Y = 1–5	Z = 1: Stainless Steel (Fitting Types 1, 3, 4 and 5)	-A: Adjustable Fitting (Fitting Types 2, 3, and 4, not w/PVC)	N1
	W = 2: 1 ¹ / ₄ " NPT with ¹ / ₂ " NPT Conduit	X = 2: SS/SS	Specify Number of Levels	Z = 2: Small Buna-N	-B: Weighted Buna-N floats for interface detection (Specify desired	
	W = 3: 2" NPT with 1/2" NPT	X = 3: PVC/PVC (Stem Type		Z = 3: Large Buna-N (Fitting Types	float S. G.)	
	Conduit	1, 3 and 4 only)		1, 3, 4 and 5)	-D4: Group IV Wiring 20 VA, SPDT	
	W = 4: 3" ANSI Flange SS & PVC only			Z = 4: PVC (For PVC Stem	Reed Switch	
	W = 5: 1/2" Tube End			only)		
					-N: Junction Box NEMA 4	
					-NT: Junction Box w/Terminal Strip NEMA 4	



NCM MINIATURE LEVEL SWITCHES

24 inches long

The KOBOLD Miniature Multipoint Level Switches are available in lengths to 48 inches. Up to five switches may be located as per your instructions.

Electrical Ratings	
Contact Type:	SPST, 100 VA,
Maximum Levels	
Group II Wiring	
(Standard):	3
Group I Wiring:	4
Lead Wires:	22AWG,

Stem Choices

Maximum Length:	48"
Wetted Parts	
Stem/Fittings:	316 SS, Brass
Float Stops	
Brass Units:	Brass
SS Units:	316 SS
• Up to 48" overall	length
Up to 4 control po	pints

Float Choices

Maximum Pressure:	
Buna-N, Polypro:	150 PSIG
Stainless Steel:	270 or 400 PSIG
Operating Temperatur	e
Buna-N: In Oil:	– 40 °F to 225 °F
In Water:	– 40 °F to 180 °F
Polypropylene:	– 40 °F to 150 °F
Stainless Steel:	– 40 °F to 300 °F
Minimum Liquid Speci	ific Gravity
Type 1 Float:	0.70
Type 2 Float:	0.47
Type 3 Float:	0.60
Type 4 Float:	0.70

Switch Geometry



Fitting Choice Selection Table



Float Choice Selection Table



- A = $\frac{3}{4}$ " minimum distance to highest level B = $\frac{1}{2}$ " minimum distance between levels
- C = 1" minimum distance from end of unit to lowest level except float type 4, 2" min. distance

Subject to change without prior notice.



NCM MINIATURE MULTIPOINT LEVEL SWITCHES

NCM Ordering Information

NCM-	W = Fitting Type	X = Fitting & Stem Material	Y = Number of Switch Levels	Z = Float Type & Material	Options
	W = 1: 1/8" NPT Male	X = 1:Brass/Brass	Y = 1–5	Z = 1:316 Stainless Steel	-D1: Group I Wiring 100 VA, SPST
	W = 2: 1/4" NPT Male	X = 2:Stainless Steel/ Stainless Steel	Specify Number of Levels	Z = 2:Buna-N	
	W = 3: 1" NPT Male			Z = 3: Polypropylene	-N: Junction Box NEMA 4
	W = 4: 3/4" NPT Male			Z = 4: 316 Stainless Steel, Small	-NT: Junction Box with Terminal Strip
	W = 5: ⁵ / ₁₆ " Tube End				