

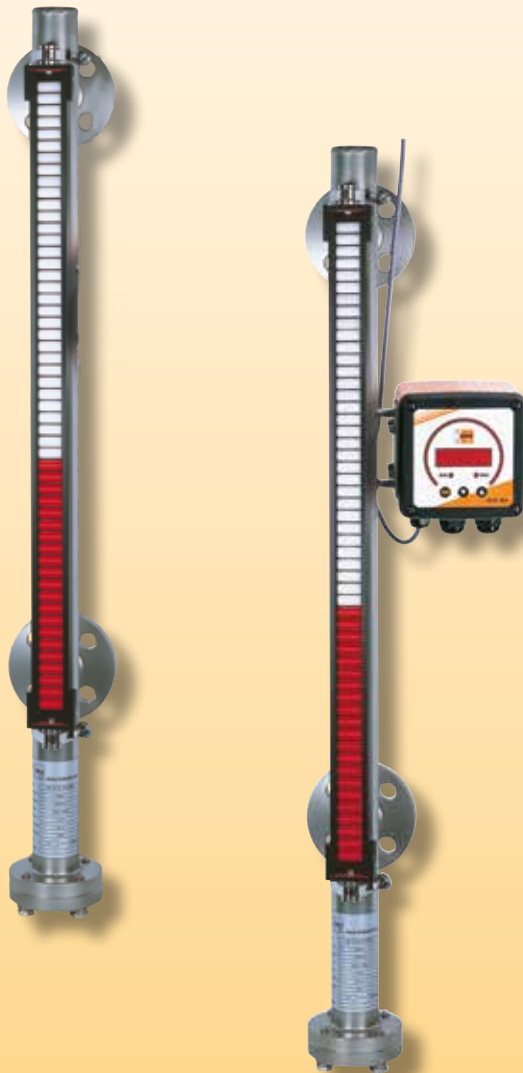
Economical Bypass Level Indicator

Mini - NBK



measuring
•
monitoring
•
analyzing

NBK-M



- 316 Stainless Steel Tube
- Max. Pressure: 580 PSIG
- Max. Temperature: 390 °F
- Measuring Lengths to 9.8 ft.
- Optional Switches, Transmitters, and Digital Displays Available
- Rugged, Economical Design



NBK-RS



NBK-RH



KOBOLD companies worldwide:

AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHINA, CZECHIA, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, REPUBLIC OF KOREA, SPAIN, SWITZERLAND, THAILAND, TUNISIA, TURKEY, USA, VIETNAM

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Description

The KOBOLD NBK-M bypass level indicator provides many of the unique features of our standard NBK, but at a fraction of the cost. The use of lighter gauge materials makes the NBK-M an economical choice for lower pressure level measurement. Like the NBK, the NBK-M is used for continuous measurement, display, and monitoring of liquid levels. The bypass tube is attached to the sidewall of a tank. According to the law of communicating vessels the level in the bypass tube equals the level of the primary vessel. A float with embedded circular magnets is located in the bypass tube and follows the liquid level. It transfers the level without contact to a display or sensing device attached to the outside of the bypass tube.

The following indication and sensing devices are available:

Magnetic Rollers

As the float passes by, the red/white* rollers are rotated in succession by 180° around their own axes. The rollers change from white to red as the level rises and from red to white as the level falls. The level in a tank or vessel is continuously displayed as a red column, even when the power fails.

* Ceramic rollers in orange/beige

Transmitter

To remotely sense the level, a transmitter with a chain of resistors or a magnetostrictive transducer can be mounted outside the bypass tube. A continuous standard signal of 4...20 mA is generated by means of a fitted transmitter. This standard signal can then be displayed on analog or digital indicating devices.

Universal Indicating Unit

A universal indicating unit, series ADI-1, can be mounted on the bypass tube to display and evaluate the standard signal (4...20 mA) generated by the transmitter.

Limit Contacts

One or more reed contacts, for point level sensing or for level control, can be mounted to the bypass tube

Applications

- Storage tanks
- Tanks on ships
- Agitator vessels
- Water tanks

Specifications

Max. Measuring Length:	9.8 ft.
Bypass Tube:	Ø1.575" (40 mm)
Max. Pressure	
Threaded Fitting:	580 PSIG
Flanged Fitting:	Per ANSI B16.5 for the Specified Flange Rating, up to 580 PSIG
Operating Temperature:	
POM Rollers:	-4...250 °F
Ceramic Rollers:	-4...390 °F
Wetted Materials	
Bypass Pipe, Fittings:	316-Ti Stainless Steel
Float:	Titanium
Seals:	NBR (-4...212 °F) (Standard) FKM, Silicone, PTFE, FFKM (Optional) POM or Ceramic (Model Based)
Rollers:	
Roller Indicator	
Protection:	IP54
Max. Viscosity:	200 cSt
Allowable Liquid S.G.	
Float Type "8":	0.78...0.95
Float Type "1":	Water, Liquid with S.G. > 0.95





Electrical Specifications

Resistive, Level Transmitter: Option "W"

Output:	Resistive, 0 to 700...7000 Ω depending on Measuring Length "M" 36 Ω each 10 mm, M < 1900 mm (6.2 feet) 10 Ω each 10 mm, M $\geq$ 1900 mm (6.2 feet)
Working Voltage:	24 V _{DC} Max.
Working Current:	100 mA Max.
Resolution:	$\pm$ ~3/8" (10 mm) for M < 6.6 ft. $\pm$ ~3/4" (20 mm) for M > 6.6 ft.
Process Temp.:	-4...390 °F
Ambient Temp.:	-4...265 °F
Electrical Connection:	Cable Gland, PG 9
Housing:	Aluminum, Pressure-cast
Electrical Protection:	IP 65

Resistive, Head Mount Transmitter: Option "M"

Output:	4-20 mA, 2-wire
Supply Voltage:	16-32 V _{DC}
Max. Loop Burden:	(V _{Supply} - 9 V) / 0.02 Ω
Resolution:	$\pm$ ~3/8" (10 mm) for M < 6.6 ft. $\pm$ ~3/4" (20 mm) for M > 6.6 ft.
Process Temp.:	-4...250 °F
Ambient Temp.:	-4...175 °F
Electrical Connection:	Cable Gland, PG 9
Housing:	Aluminum, Pressure-cast
Electrical Protection:	IP 65

Magnetostrictive, Head Mount Transmitter: Option "T"

Output:	4-20 mA, 4-wire
Supply Voltage:	24 V _{DC} , max. 150 mA
Max. Loop Burden:	500 Ω
Resolution:	$\pm$ 0.04" ($\pm$ 1 mm)
Process Temp.:	-4...250 °F
Ambient Temp.:	-4...175 °F
Electrical Connection:	Cable Gland, PG 9
Housing:	Aluminum, Pressure-cast
Electrical Protection:	IP 65

Low Temperature Switches: Model NBK-RM

Function:	Bistable Reed Contact, SPDT
Ratings:	230 V _{AC/DC} , 1 A, 60 W/VA
Hysteresis:	Approx. 1/2" (15 mm)
Max. Process Temp.:	212 °F
Max. Ambient Temp.:	165 °F
Electrical Connection:	10 ft. PVC Cable
Housing:	Polycarbonate
Electrical Protection:	IP 67

High Temperature Switches: Model NBK-RS.../RH...

Function:	Bistable SPDT
Ratings:	230 V _{AC/DC} 1.0 A, 60 W/VA
Resistance:	Approx. 100 m Ω
Hysteresis:	Approx. 1/2" (15 mm)
Process Temp.:	
NBK-RS:	-40...248 °F
NBK-RH:	-40...662 °F*
Ambient Temp.:	-40...212 °F
Cable:	Silicone Cable, Color Coded 4Gx1 mm ²
Cable Gland:	M16x1.5 Brass
Housing:	304 Stainless Steel
Electrical Protection:	IP 67

* Limitation of maximum medium temperature to 248 °F / 390 °F due to bypass level indicator ratings



Economical Bypass Level Indicator Model NBK-M

*Additional Information Required for Order:

To ensure proper operation, this product requires a completed application guide form to be submitted with any order. Please refer to the end of this datasheet in order to obtain the correct form. You can also contact your KOBOLD representative for this form.

Order Details (Example: **NBK-M 2 A 15 P M 8**)

Model	Flange Rating	Fitting Type	Fitting Size	Roller Indicator	Transmitter	Float S.G. ²⁾
NBK-M..	..0.. = No Flange (Threaded Fitting)	..N.. = NPT Thread	..15.. = 1/2"	..0.. = None	..0.. = None	..1 = 1.0 For use with S.G > 0.95
			..20.. = 3/4"	..P.. = POM (250 °F Max.)	..M.. = Resistive, 4-20 mA Transmitter	
	..2.. = ANSI Class 150 lb ..3.. = ANSI Class 300 lb	..A.. = ANSI Flange	..25.. = 1"	..K.. = Ceramic (390 °F Max.)	..T.. = Magnetostrictive, 4-20 mA Transmitter ..W.. = Resistive, 0-5 KΩ Output	..8 = 0.8 For use with S.G 0.78...0.95

Options (Add Codes to Base Part Number)

..S2 = Vent Plug 1/4" NPT	..W1 = FKM Seal on the Bottom Flange (5...390 °F)
..S3 = Vent Plug 1/2" NPT	..W2 = Silicone Seal on the Bottom Flange (-76...390 °F)
..R2 = Drain Plug 1/4" NPT	..W3 = PTFE Seal on the Bottom Flange (-4...250 °F)
..R3 = Drain Plug 1/2" NPT	..W4 = FFKM Seal on the Bottom Flange (-4...390 °F)
..E3 = Drain Flange, ANSI 1/2"	..M1 = Engraved Level Measuring Scale, Max. Process Temp. 390 °F
..E4 = Drain Flange, ANSI 3/4"	..M2 = Printed Measuring Scale with UV-Protectant Coating, Max. Process Temp. 250 °F
..J = Upper Clean-out Flange	
..L2 = Drain Valve, 1/4" NPT	..C ¹⁾ = Digital and Bargraph Display model ADI-1V00 WF
..L3 = Drain Valve, 1/2" NPT	..X = Hydrostatic Testing at 1.5x Nominal Pressure
..H2 = Top and Bottom Flush Connections, 1/2" ANSI Flange	

Accessories (Order as Separate Line Items)

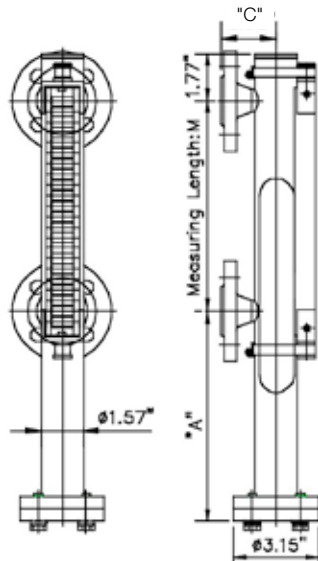
NBK-RM = Standard Limit Contact (Bistable SPDT), Max. Process Temperature 212 °F
NBK-RS01U03 = Limit Contact, Bistable SPDT, Max. Process Temperature 248 °F, 3 m Silicone Cable, Weight: 1.11 lbs
NBK-RS01U06 = Limit Contact, Bistable SPDT, Max. Process Temperature 248 °F, 6 m Silicone Cable, Weight: 1.82 lbs
NBK-RS01U10 = Limit Contact, Bistable SPDT, Max. Process Temperature 248 °F, 10 m Silicone Cable, Weight: 2.76 lbs
NBK-RH01U03 = Limit Contact, Bistable SPDT, Max. Process Temperature 662 °F, 3 m Silicone Cable, Weight: 1.28 lbs
NBK-RH01U06 = Limit Contact, Bistable SPDT, Max. Process Temperature 662 °F, 6 m Silicone Cable, Weight: 1.99 lbs
NBK-RH01U10 = Limit Contact, Bistable SPDT, Max. Process Temperature 662 °F, 10 m Silicone Cable, Weight: 2.93 lbs

¹⁾ Only available with level transducer T (magnetostrictive transmitter) or M (reed chain transmitter) output options

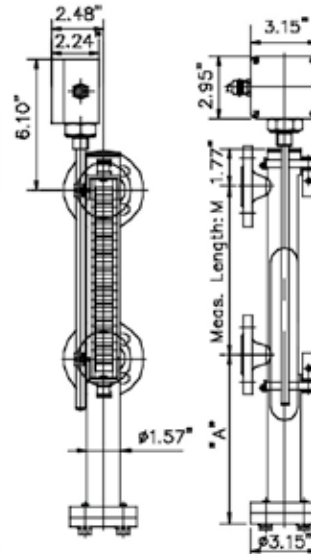
²⁾ For more accurate indication, floats can be weighed per exact customer specified S.G.; consult factory for details

Dimensions

NBK-M... with Roller Display



NBK-M... with Roller Display and Magnetostrictive Transmitter



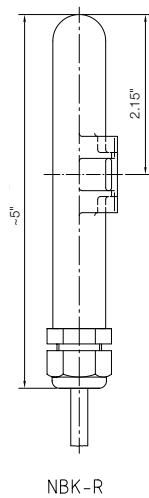
Clearance Dimensions "C"

Type	1/2"	3/4"	1"
150 lb ANSI V Flange	2.52"	2.64"	2.60"
300 lb ANSI V Flange	2.72"	2.84"	2.88"
NPT Threaded	2.37"	2.37"	2.37"

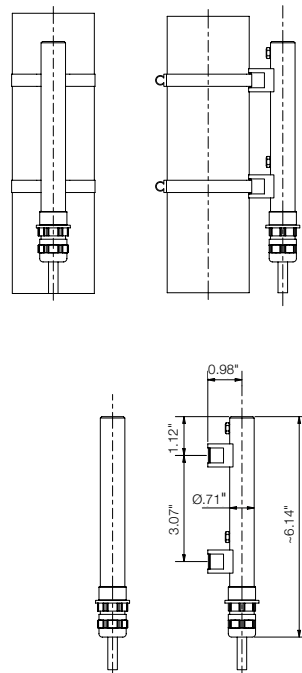
Clearance Dimensions "A"

Specific Gravity	
0.8	1.0
11.22"	7.09"

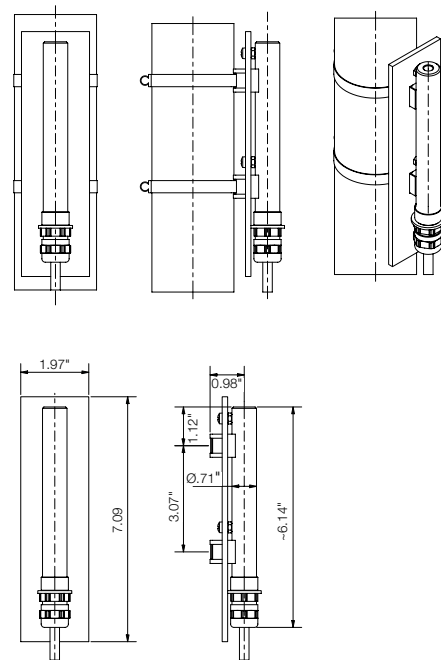
NBK-R



NBK-RS



NBK-RH





NBK-M Application Guide

Rev 07/07/2026

General Information

Contact Name: _____

Date: _____

Company Name: _____

Part Number: _____

Phone: _____

Number of Pieces Required: _____

Email: _____

Quote Number (if already quoted): _____

This has not been quoted yet and pricing is required.

Design Conditions

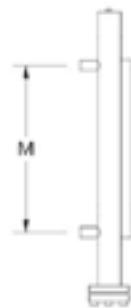
1. Pressure: Normal: _____ PSIG Maximum: _____ PSIG

2. Temperature: Normal: _____ °F Maximum: _____ °F

3. Liquid Type: _____

4. Liquid Specific Gravity at Normal Operating Temp: _____ Maximum Temp: _____

5. Liquid Viscosity at Normal Operating Temperature: _____



Mounting Configuration

1. Measuring Length "M": _____ Inches cm (M = center to center length between fittings)

2. Fitting Size: 1/2" 3/4" 1"

3. Fitting Type: NPT Thread 150 LB ANSI Flange 300 LB ANSI Flange Other: _____

Options - Roller Indicator

None (Option "O")

POM (250 °F Max - Option "P")

Ceramic, (390 °F Max - Option "K")

Options - Transmitter

None (Option "O")

Resistive, 4-20 mA, 2-wire (Option "M")

Magnetostrictive, 4-20 mA, 4-wire (Option "T")

Resistive, 0-5 kΩ (Option "W")

Transmitter Location

Top Mount Housing (Default)

OR

Bottom Mount Housing

Left Side (Default)

OR

Right Side

Options - Float Specific Gravity

1.0 - Liquid SG is greater than 0.95 (Option "1")

0.8 - Liquid SG is between 0.78 and 0.95 (Option "8")

Options - Additional

Vent Plug:	1/4" NPT (Option "S2")	1/2" NPT (Option "S3")
Drain Plug:	1/4" NPT (Option "R2")	1/2" NPT (Option "R3")
Drain Flange:	ANSI 1/2" (Option "E3")	ANSI 3/4" (Option "E4")
Drain Valve:	1/4" NPT (Option "L2")	1/2" NPT (Option "L3")

Upper Clean Out Flange (Option "J")

Top and Bottom Flush Connections, 1/2" ANSI Flange (Option "H2")

FKM Seal on the Bottom Flange (Option "W1")

Silicone Seal on the Bottom Flange (Option "W2")

PTFE Seal on the Bottom Flange (Option "W3")

FFKM Seal on the Bottom Flange (Option "W4")

*Engraved Level Measuring Scale, Max. Temp 390 °F (Option "M1")

*Printed Level Measuring Scale with UV-Protectant Coating, Max. Temp 250°F (Option "M2")

*Specify Scale:	inches	cm	*Specify Location:	Left Side	Right Side (Default)
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Digital and Bargraph Display Model ADI-1V00 WF (Option "C")

Hydrostatic Testing at 1.5x Nominal Pressure (Option "X")

Option - Switches (ordered as separate line items)

Switches (SPDT): Quantity: _____

Standard Switch, 212 °F Max (NBK-RM)

NBK-RS01UXX (Max. Temp. 248 °F)

XX = 03 (3m Cable)	XX = 06 (6m Cable)	XX = 10 (10m Cable)
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NBK-RH01UXX (Max. Temp. 662 °F)

XX = 03 (3m Cable)	XX = 06 (6m Cable)	XX = 10 (10m Cable)
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Other Options - Custom Configurations - Special Requirements:

NBK Purchasing Process

In order to provide you with the correct and most cost-effective NBK, our technical team at KOBOLD will partner with you in building your NBK. NBKs are highly customizable, have critical nuances that are easy to overlook, and are built to order. After submission of this form, one of our engineers will contact you to schedule a consultation. If you are a distributor or reseller, please consider including any end-users in that consultation who will be part of the design and installation. This will shorten the purchasing process and ensure that nothing is overlooked along the various stakeholders in the supply chain. If you require immediate assistance or have any questions, please contact our engineering team at 412-788-2830. Please email this form to info@koboldusa.com.