

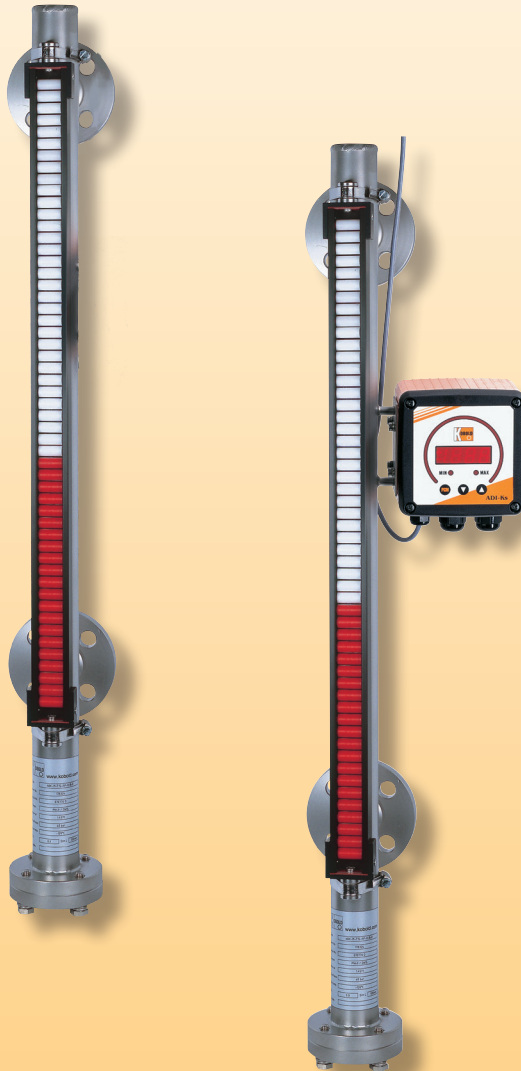
Economical Bypass Level Indicator

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



KOBOLD companies worldwide:

ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHILE, CHINA, COLOMBIA, CZECH REPUBLIC, EGYPT, FRANCE, GERMANY, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, REPUBLIC OF KOREA, ROMANIA, SINGAPORE, SPAIN, SWITZERLAND, TAIWAN, THAILAND, TUNISIA, TURKEY, UNITED KINGDOM, 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. It uses our revolutionary ring magnet float design, allowing the user full flexibility in adding roller indicators, switches, and other options anywhere on the periphery of the bypass tube. The use of lighter gauge materials makes the NBK-M an economical choice for low pressure level measurement. A magnetic roller indicator strip allows local level reading at the tank as they rotate from white to red as the level changes. This assembly can be rotated in the field to any position on the bypass tube for easier readings in tight locations. Rollers are made of polypropylene for temperatures under 250 °F and are made of ceramic for temperatures above. SPDT switches are available for use in hi/low level alarms and automatic tank fill/empty operations. The switch level setpoint is adjusted in the field by sliding the switch assembly up or down on the bypass pipe. Magnetostrictive and variable resistance level transmitters are available for remote indicators or control systems. A universal indicating unit, ADI series, can be mounted on the bypass to display and evaluate the standard signal (4-20mA) generated by the transmitter.



Specifications

Max. Pressure

Threaded Fitting: 580 PSIG
Flanged Fitting: Per ANSI B16.5 for the Specified Flange Rating, up to 580 PSIG

Wetted Materials

Bypass Pipe, Fittings: 316-Ti Stainless Steel
Float: Titanium
Seals: NBR (-4...390 °F)(Standard)
 FKM, Silicone, PTFE, FFKM (Optional)
Rollers: Polypropylene or Ceramic (Model Based)
 IP54

Max. Liquid Viscosity: 200 Centistokes

Allowable Liquid S.G.

Float Type "8": 0.78...0.95
Float Type "1": Water, Liquid with S.G. > 0.95

Max. Measuring Length: 9.8 ft.

Electrical Specifications

Resistive, Level Transmitter: Option "W"

Output: Resistive, Approx. 0...5 kohm
Working Voltage: 24 VDC Max.
Working Current: 100 mA Max.
Resolution: ± 3/8" for Measuring Lengths < 6.6 ft.
 ± 3/4" for Measuring Lengths > 6.6 ft.
Max. Process Temp.: 390 °F
Max. Ambient Temp.: 265 °F
Electrical Connection: Cable Gland, PG 9
Electrical Protection: IP 65

Resistive, Head Mount Transmitter: Option "M"

Output: 4-20 mA, 2-wire
Supply Voltage: 16-32 VDC
Max. Loop Burden: $(V_{Supply}-9)/0.02$ Ohms
Resolution: ± 3/8" for Measuring Lengths < 6.6 ft, ± 3/4" for Measuring Lengths > 6.6 ft.
Max. Process Temp.: 250 °F
Max. Ambient Temp.: 175 °F
Electrical Connection: Cable Gland, PG 9
Electrical Protection: IP 65

Magnetostrictive, Head Mount Transmitter: Option "T"

Output: 4-20 mA, 4-wire
Supply Voltage: 24 VDC ± 10%
Max. Loop Burden: 500 Ohms
Resolution: ± 1 mm
Max. Process Temp.: 175 °F
Max. Ambient Temp.: 175 °F
Electrical Connection: Cable Gland, PG 9
Electrical Protection: IP 65

Low Temperature Switches: Model NBK-RM

Function: Bistable Reed Contact, SPDT
Ratings: Max. 60 Watt, 230 VAC, 0.8 A
Hysteresis: Approx. 1/2"
Max. Process Temp.: 212 °F
Max. Ambient Temp.: 165 °F
Electrical Connection: 10 ft. PVC Cable
Electrical Protection: IP 67

High Temperature Switches: Model NBK-RT200M

Function: Bistable, Magnetically Activated, SPDT
Ratings: Max. 80 Watt, 230 VAC, 1.0 A
Hysteresis: Approx. 1/2"
Max. Process Temp.: 390 °F
Max. Ambient Temp.: 290 °F
Electrical Connection: Cable Gland, PG 9
Electrical Protection: IP 65



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)	..A.. = ANSI Flange ..N.. = NPT Thread	..15.. = 1/2"	..0.. = None	..0.. = None	..1 = Liquid S.G > 0.95 ..8 = Liquid S.G = 0.78...0.95
	..2.. = ANSI Class 150 lb		..20.. = 3/4"	..P.. = Polypropylene (250 °F Max.)	..T.. = Magnetostrictive, 4-20 mA Transmitter	
	..3.. = ANSI Class 300 lb		..25.. = 1"	..K.. = Ceramic (390 °F Max.)	..W.. = Resistive, 0-5 Kohm Output	

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 = Laser Etched Level Measuring Scale, Max. Process Temp. 250 °F
..J = Upper Clean-out Flange	..C ¹⁾ = Digital and Bargraph Display model ADI-1V00 WF
..L2 = Drain Valve, 1/4" NPT	..P = Radiographic Weld Testing per DIN 54111 T1
..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)

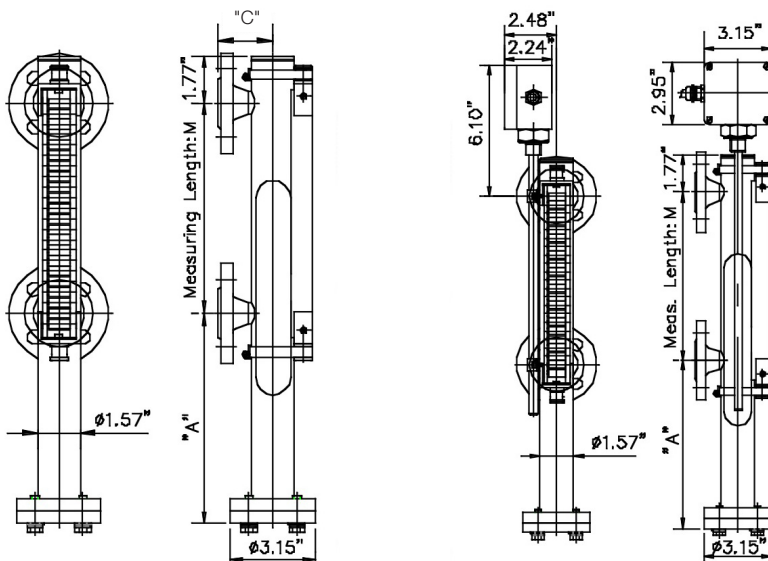
NBK-RM = Standard SPDT Contact, Max. Process Temperature 212 °F

NBK-RT200M = High Temperature SPDT Contact, Max. Process Temperature 390 °F

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

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

Dimensions



Clearance Dimensions "A"

Specific Gravity	
0.8	1.0
11.22"	7.09"

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"



Economical Bypass Level Indicator Model NBK-M

**NBK-M Bypass Level Gauge
Application Guide
Rev 09/2016**

FAX to:
KOBOLD Instruments, Inc.
+1.412.788.4890 (USA)
+1.514.428.8899 (Canada)

Customer Name: _____

Company Name: _____

Phone: _____ Fax: _____

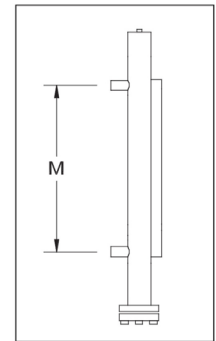
E-mail: _____ Date: _____

Quotation #: _____ Part Number: _____

* Accurate process information is essential to ensure proper operation. Please fill out the form completely and submit with your order.

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 "0") Polypropylene (250 °F Max. - Option "P") Ceramic (390 °F Max. - Option "K")

Options - Transmitter

- None (Option "0") Resistive, 4-20mA, 2-wire (Option "M") Magnetostrictive, 4-20mA, 4-wire (Option "T")
- Resistive, 0-5k Ohm (Option "W")

Options - Float Specific Gravity

- 1.0 - Liquid S.G. > 0.95, (Option "1") 0.8 - Liquid S.G. = 0.78 - 0.95, (Option "8")

Options - Additional

- Vent Plug: 1/4" NPT (Option "S2") 1/2" NPT (Option "S3") PTFE Seal on the Bottom Flange (Option "W3")
- Drain Plug: 1/4" NPT (Option "R2") 1/2" NPT (Option "R3") FFKM Seal on the Bottom Flange (Option "W4")
- Drain Flange: ANSI 1/2" (Option "E3") ANSI 3/4" (Option "E4") *Engraved Level Measuring Scale, Max. Temp. 390 °F (Option "M1")
- Drain Valve: 1/4" NPT (Option "L2") 1/2" NPT (Option "L3") *Laser Etched Level Measuring Scale, Max. Temp. 250 °F (Option "M2")
- Upper Clean-out Flange (Option "J") *Specify: Inches cm *Specify: Left Side Right Side
- Top & Bottom Flush Connections, 1/2" ANSI Flange (Option "H2") Digital and Bargraph Display model ADI-1V00 WF (Option "C")
- FKM Seal on the Bottom Flange (Option "W1") Radiographic Weld Testing per DIN 54111 T1 (Option "P")
- Silicone Seal on the Bottom Flange (Option "W2") Hydrostatic Testing at 1.5x Nominal Pressure (Option "X")

Options - Switches (Ordered as Separate Line Items)

- Switches (SPDT): Quantity _____ Standard Switch, 212°F Max. (NBK-RM) High Temp. Switch, 390°F Max. (NBK-RT200M)