NBK-M - Economical Level Indicator

Benefits and Features

- 316 Stainless Steel Tube
- Maximum Pressure: 580 PSIG
- Maximum Temperature: 390°F
- Measuring Lengths to 9.8 Ft.
- Optional Switches, Transmitters and Digital Displays Available
- Economical Rugged Design
- PRICES START AT $500

Table 1: Process Temperature Limits for Various Options

Option	Process Temperature Limit
Polypropylene Rollers	212°F
Ceramic Rollers	390°F
NBK-R	212°F
NBK-RT200	390°F
Option-M	265°F
Option-M1	390°F
Option-M2	250°F
Option-T	175°F
Option-W	265°F

*All options not listed in this table have a maximum process temperature limit of 390°F

General Description

The Mini-NBK bypass level indicator provides many of the unique features of our standard NBK series but at a fraction of the cost. Like its predecessor, the Mini-NBK uses 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 and a streamlined manufacturing process makes the Mini-NBK a very economical choice for low pressure level measuring applications.

Roller Indicators:
A magnetic indicator strip allows the user to take local level readings at the tank. The indicator rollers rotate from white to red as tank level changes. The roller indicator assembly can be rotated in the field to any position on the bypass tube in order to allow for easy readings when installed in a tight location. Rollers are available made of polypropylene for low temperature applications (<212°F) and ceramic for higher temperature applications.

Switches:
SPDT switches are available to use hi/low level alarms or for 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.

Level Transducers:
Magnetostrictive and variable resistance level transducers are available for transmission of tank level to a remote indicator or control system.

Digital Indicators:
For units which have a transducer installed, a digital indicator can also be mounted on the Mini-NBK to allow for local digital indication, an analog output and/or switches. Contact your Flow-Network Representative for details.

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Specifications

Max. Pressure
Threaded Fittings: 580 PSIG
Flanged Fittings: Per ANSI B16.5 or DIN for the specified flange rating to 580 PSIG Max.

Wetted Materials:
Bypass Pipe & Fittings: 316-Ti stainless steel
Float: Titanium
Seals: Buna-N standard, viton, silicone, Teflon and Kalrez optional

Roller Materials: Polypropylene or ceramic based on ordering code
Max. Liquid Viscosity: 200 Centistokes

Allowable Liquid SG:
Float style 8: Liquid specific gravity between 0.78 and 0.94
Float style 1: Water and any liquid with specific gravity above 0.95
Max. Measuring Length: 9.8 ft

Electrical Connection

Level Transducers Resistive, Option-W
Output: Resistive 0 to 5 K-ohm Approx.
Working Voltage: 24 VDC Max.
Working Current: 100 mA Max.
Resolution: ±3/8" for Measuring lengths <6.6 Ft. ±3/4" for Measuring lengths>6.6Ft.
Max. Process Temperature: 390°F
Max. Ambient Temperature: 265°F
Electrical Connection: Cable gland, PG 9
Electrical Protection: NEMA 4/IP65
*Option W can be combined with DFM, DST or DFA series remote controllers/ transmitters to achieve an analog output, switching or remote indication.

Resistive, with Head Mounted Transmitter, Option-M
Output: 4-20 mA, 2-wire
Supply Voltage: 16-32 VDC
Max. Loop Burden: (Vsupply-9)/0.02 ohms
Resolution: ±3/8" for Measuring lengths <6.6 Ft. ±3/4" for Measuring lengths>6.6Ft.
Max. Process Temperature: 265°F
Max. Ambient Temperature: 175°F
Electrical Connection: Cable gland, PG 9
Electrical Protection: NEMA 4/IP65

Magnetostrictive, with Head Mounted Transmitter, Option-T
Output: 4-20 mA, 4-wire
Supply Voltage: 24 VDC +/-10%
Max. Loop Burden:500 ohms
Resolution: +/-1mm
Max. Process Temperature: 175°F
Max. Ambient Temperature: 175°F
Electrical Connection: Cable gland, PG 9
Electrical Protection: NEMA 4/IP65

Switches Low Temperature, Model NBK-R
Function: Bistable reed contact, SPDT
Ratings: Max. 60 watt, 230 VAC, 0.8A
Hysteresis: Approx. 1/2"
Max. Process Temperature: 212°F
Max. Ambient Temperature: 165°F
Electrical Connection: 10 Ft. PVC cable
Electrical Protection: NEMA 4X/IP67

High Temperature, Model NBK-RT200
Function: Bistable, magnetically activated, SPDT
Ratings: Max. 80 watt, 230 VAC, 1.0A
Hysteresis: Approx. 1/2"
Max. Process Temperature: 390°F
Max. Ambient Temperature: 290°F
Electrical Connection: Cable Gland, PG 9
Electrical Protection: NEMA 4X/IP65

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NBK-M - Economical Level Indicator

Ordering Information

NBK-M = Mini NBK Bypass Level Indicator

Flange Rating

0	= No flange (threaded fittings)
1	= DIN PN 6 (for DIN flanges only)
2	= ANSI Cl.150 LB/DIN PN 16
3	= ANSI Cl. 300 LB/DIN PN 40

Fitting Type

A	= ANSI Flange
F	= DIN Flange
N	= NPT Thread
R	= BSP Thread

Fitting Size

10	= DN 10 mm (DIN Flange only)
15	= 1/2"/DN 15 mm
20	= 3/4"/DN 20 mm
25	= 1"/DN 25 mm

Roller Indicator Type

0	= None
P	= Polypropylene (212°F Max.)
K	= Ceramic (390°F Max.)

Level Transducer Type

0	= None
M	= Resistive, with 4-20 mA transmitter
T	= Magnetostrictive, with 4-20 mA transmitter
W	= Resistive, 0 to 5 K-ohm output

Float Specific Gravity

1	= Float S.G. = 1.0 for liquid specific gravity above 0.95
8	= Float S.G. = 0.8 for liquid specific gravity between 0.78 and 0.94

Options (add option codes to base part number)

E1	= Drain flange, DIN 15 mm, 316-Ti SS
E2	= Drain flange, DIN 20 mm, 316-Ti SS
E3	= Drain flange, ANSI 1/2", 316-Ti SS
E4	= Drain flange, ANSI 3/4", 316-Ti, SS
H1	= Top and bottom flush connections DIN 15 mm flange, 316-Ti SS
H2	= Top and bottom flush connections 1/2" ANSI flange, 316-Ti SS
L1	= Drain valve, 1/4" BSP, 316-Ti, SS
L2	= Drain valve, 1/4" NPT, 316-Ti, SS
M1	= Level measuring scale, engraved scale Max. process temperature 390°F
M2	= Level measuring scale, foil scale Max. process temperature 250°F

R1	= Drain plug 1/4" BSP
R2	= Drain plug 1/4" NPT
P	= Radiographic weld testing per DIN 54111 T1
W1	= Viton seal on bottom flange
W2	= Silicone seal on bottom flange
W3	= Teflon seal on bottom flange
W4	= Kalrez seal on bottom flange
X	= Hydrostatic testing at 1.5 X nominal pressure

Accessories (order as separate line items)	
NBK-R	Standard SPDT contact, 212°F Max. process temperature
NBK-RT200	High temperature SPDT contact, 390°F max. process temperature

Subject to change without prior notice.

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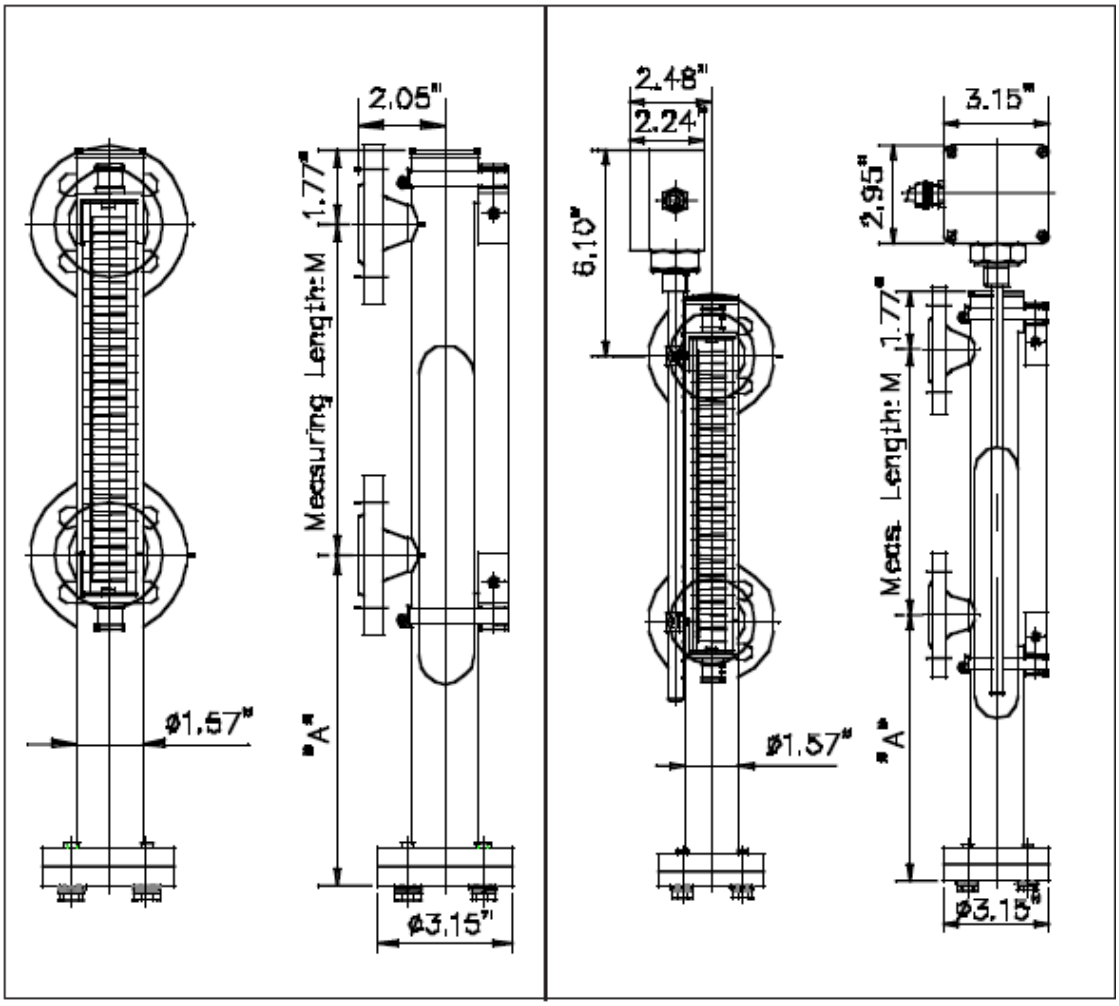
NBK-M - Economical Level Indicator

Dimensions



Float Well Dimension A		
	Specific Gravity	
Flange Rating	Customer Specified	1.0
PN 6	10.27”	6.64”
150 LB	10.27”	6.64”
300 LB	11.18”	7.0”

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*** To ensure fast order processing, please retain the completed application data sheet and send it along with your purchase.**

FAX to Flow-Network
(770) 917-8352

Customer Name: _____

Company Name: _____

Phone: _____

Fax: _____

E-Mail : _____

Date: _____

Process Conditions

Accurate process information is essential to ensure the proper operation of your level indicator. Please fill out accurately and completely.

Material

☐ 316 Stainless Steel

1. Pressure: Normal _____PSIG Maximum _____PSIG

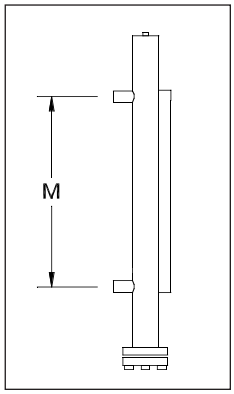
2. Temperature: Normal _____˚F Maximum _____˚F

3. Liquid Type: _____

4. Liquid Specific Gravity at Normal Operating Temp: _____

5. Liquid Viscosity: _____ **Centistoke**

Mounting Configuration



1. Measuring Length M: _____ **Inches** (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 (specify): _____

Roller Indicator Type

☐ Polypropylene (212˚F Max. Temp.) Suffix-P ☐ Ceramic (390˚F Max. Temp.) Suffix-K

Options

1. Switches (SPDT): Quantity _____ (See catalog for switch specifications)

☐ Standard Switch (212˚F Max. Temp.) NBK-R ☐ Hi-Temp Switch (390˚F Max. Temp.) NBK-RT200

2. Analog Transducer and Signal Conditioner:

☐ Power Requirement _____ ☐ VAC ☐ VDC

☐ Transducer w/ integral 4-20 mA transmitter (2-wire, 16-32 VDC)

☐ Transducer only. For use w/ remote mounted signal conditioner/transmitter, DFM, DST or DFA series Magnetostrictive with 4-20 mA transmitter DFM, DST or DFA series.)

3. ☐ **Drain Valve** Suffix -L2

4. ☐ **Level Measuring Scale**
Suffix -M1 or M2 (Scale in inches)

☐ Scale mounted on left

☐ Scale mounted on right

5. ☐ **Top and Bottom Cleanout Flanges**
Suffix -H1 or H2

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