



*NK Instruments Pvt. Ltd.*

Process Control Instruments for Indication and Control of:



PRESSURE

VACCUM

DP

FLOW

VELOCITY

LEVEL

TEMPERATURE

CONDUCTIVITY

pH

VIBRATION

## INSTRUCTION MANUAL

# REFLEX LEVEL INDICATOR



### CONTACT DETAILS

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## Warning

Read all warnings and instructions before performing installation or maintenance. Safety glasses and gloves should be worn at all times when working with or examining water gauge glass and connections

## Danger

Improper installation or maintenance of gauge glass and connections can cause immediate or delayed breakage resulting in bodily injury and / or property damage.

## Installation

Only properly trained personnel should install and maintain water gauge and connections. Remember to wear safety gloves and glasses during installation. Before installing, make sure all parts are free of chips and debris.

The Reflex Level Gauge is packed in separate pieces for protection during shipment. It is easy to assemble by following the guidelines in this manual. Upon unpacking, inspect all components for damage. Check the NK Instrument nameplate in the Gauge Housing Chamber to verify that the specifications of the Reflex Level Gauge are correct for the operating conditions. Contact NK Instruments if you have any questions or encounter any problems.

All liquid level gauges installation provided with gauge valve sets equipped with ball check shut-off. Gauge valve sets are designed to isolate the gauges from the pressure vessel when it becomes necessary to drain or service the gauges. The ball check shut-off is designed to retard leakage of the contained fluid in the event of gauge glass breakage.

The number of different types of gauge and valve installations is too great to adequately detail in an installation manual. It is, therefore, the user's responsibility to assure that the knowledgeable installation personnel plan and carry out installation in the safe manner. The following procedures are some of the installation guidelines that should be employed.

### 1. Piping Strain

The gauge should be mounted and connected so that it does not support any piping weight. Piping not properly supported, independent of the gauge, may not subject the gauge to stress that can cause leaks or glass breakage. Support brackets are available as an accessory.

### 2. Differential Thermal Expansion

High mechanical loads may be imposed on a gauge by expanding and contracting pipes due to hot or cold service. Such mechanical loads on the gauge must be minimized by the use of expansion loops in the system. Failure to allow for expansion or contraction can result in leaks or glass breakage.

### 3. Mirror Viewing

For added safety, a system of indirect viewing by means of mirrors should be installed to protect personnel from hazards of possible gauge failure.

### 4. Nut Retouring

Nut re-torque is vital to the operation of a liquid level gauge because gaskets take permanent

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set under initial bolt loading at assembly. Tightening of nuts before installation is 40 ft. lbs. (Lubricated) is necessary to insure pressure-retaining capabilities of liquid level gauge to specific design ratings. The user must refer to the liquid level gauge model and assembly number and to the purchase order or tag to determine materials of construction.

**Note : Failure to comply with the proper torqueing sequence or force/height value can lead to leakage, gasket blow-out or glass breakage resulting in gage failure, serious injury and / or property damage**

## Product Warranty

NK Instruments warrants its products as designed and manufactured by NK Instruments to be free of defects in material and workmanship for a period of one year after the date of installation or eighteen months after the date of manufacture, whichever is earliest. NK Instruments will, at its option, replace or repair any products which fail during the warranty period due to defective material or workmanship.

Prior to submitting any claim for warranty service, the owner must submit proof of purchase to NK Instruments and obtain written authorization to return the product. Thereafter, the product shall be returned to NK Instruments with freight prepaid

This warranty shall not apply if the product has been disassembled, tampered with, repaired or altered outside of the NK Instruments factory, or if it has been subjected to misuse, neglect or accident.

NK Instruments responsibility hereunder is limited to repairing or replacing the product at its expense. NK Instruments shall not be liable for loss, damage, or expenses directly or indirectly related to the installation or use of its products, or from any other cause or for consequential damages. It is expressly understood that NK Instruments is not responsible for damage or injury caused to other products, building, property or persons, by reason of the installation or use of its products.

THIS IS NK INSTRUMENTS SOLE WARRANTY AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED WHICH ARE HEREBY EXCLUDED, INCLUDING IN PARTICULAR ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

This document and the warranty contained herein may not be modified and no other warranty, expressed or implied, shall be made by or on behalf of NK Instruments unless modified or made in writing and signed by the Proprietor of NK Instruments.

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## USE And Care

DO NOT's

DO NOT use glass if it contains any scratches, chips, or any other visible signs of damage.

DO NOT reuse any glass packing.

DO NOT subject gauge glass to bending or torsional stresses.

DO NOT over tighten glass packing nuts.

DO NOT allow glass to touch any metal parts.

DO NOT exceed the recommended pressure of the gauge or gauge glass.

DO NOT clean the gauge or gauge glass while pressurized or in operation.

## DO's

DO verify proper gauge has been supplied.

DO examine gauge and packings carefully for damage before installation.

DO install protective guards and utilize automatic ball checks where necessary to help prevent injury in case of glass breakage.

DO inspect the gauge daily, keep maintenance records, and conduct routine replacements. DO protect glass from sudden changes in temperature such as drafts, water spray, etc.

## Maintenance

Examine the gauge regularly for any signs of clouding, scratching, erosion, or corrosion. This will help establish the routine inspection and routine replacement schedules.

## Inspection

Examine the surface of the gauge for scratches, corrosion, chips, cracks, surface flaws, or nicks.

## STORING

Keep the gauge in original packaging until ready to install.

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