

# LONN600-4A Series Handheld Tuning Fork Density Meter (Concentration Meter)

Intelligent on-line density and concentration meter is a solid and reliable handheld instrument which only need minimal maintenance. It provide fully integrated "plug and play, maintenance-free" density, concentration measurement.

## Product feature

High performance generic type density/concentration meter

High precision hygiene type density/concentration meter

Input density/concentration meter

Liquid density/concentration meter

## Field of application

- ◆ Oil industry
  
- ◆ Chemicals industry
  
- ◆ Medicine industry
  
- ◆ Food and beverage industry
  
- ◆ Battery、 electrolyte industry



## LONN600-4A handheld tuning fork density concentration meter

### Introduction

LONN600-4A handheld tuning fork density concentration meter is used to measure the density or concentration of the liquid medium in the tank or pipe. Density or concentration measurement is an important process control in production process. The densitometer can be used as an indicator for other quality control parameters such as solid content or concentration. It can meet the requirements of measurement of density, concentration and solid content.

### Working principle

LONN600-4A online density concentration meter, the sound frequency signal source is used to excite the metal tuning fork, and make the tuning fork vibrate freely at the central frequency, this frequency is related to the density of the contact liquid, so that the density of liquid can be measured by frequency analysis, then give temperature excursion to eliminate temperature excursion of the system. According to the corresponding relation of fluid density and concentration, the concentration value of below 20°C can be calculated.

Liquid density meter	Particles limit		Containing air	Maximum liquid viscosity
	Particle diameter	Suspended particles %		
LONN600-4A	<10 μm 10~50 μm	<=40% <=20%	Generally not used	2000 cP

### The density performance

Accuracy <sup>(1)</sup>	±0.003 g/cc	±3.0 kg/m <sup>3</sup>
Working range <sup>(2)</sup>	0 ~ 3 g/cc	0 ~ 3000 kg/m <sup>3</sup>
Repetition	±0.001 g/cc	±1 kg/m <sup>3</sup>
Process temperature effect (calibrated) <sup>(3)</sup>	±0.0005 g/cc	±0.5 kg/m <sup>3</sup>

### Temperature specification

Process temperature	-10°C - 120°C
Ambient temperature	-10°C - 85°C
Temperature coefficient	0.1kg/m <sup>3</sup> /°C (calibrated)
Built-in temperature sensor	PT100

## Structure material

Component contacting liquid	Stainless steel 316L or others (customization)
Fork polishing	Standard, PFA coating or electropolishing

## Range of fluid viscosity

Viscosity requirement	0-2000 cP
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## Compatibility of liquid and material

The following table gives the instructions to the compatibility of liquid and material for Lonn 600-4 tuning fork densimeter.


Liquid	Type	Molecular formula	Concentration (%)	Zr	Heusler alloy C	Stainless steel
Acid	Hydrochloric acid	HCl	0-40	☆	○	×
	Sulphuric acid	H <sub>2</sub> SO <sub>4</sub>	0-50	☆	○	○
			50-75	○	○	×
			75-98	○	○	○
	Hydrogen nitrate	HNO <sub>3</sub>	0-100	☆	○	○
	Phosphoric acid	H <sub>3</sub> PO <sub>4</sub>	0-98	×	☆	○
Alkali	Sodium hydrate	NaOH	0-100	×	☆	○
	Potassium hydrate	KOH	0-50	☆	☆	○
	Calcium hydroxide	Ca(OH) <sub>2</sub>	0-50	○	☆	○
Others	Carbamide Sodium	(NH <sub>2</sub> ) <sub>2</sub> CO NaOCl	0-100	☆	☆	☆
	Hypochlorite	H <sub>2</sub> O <sub>2</sub>	0-16	×	○	×
	Perhydrol		0-90	×	☆	×

☆ Recommended    ○ Use in specific concentration and temperature    × Inapplicable


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