



Toshiba Density (Consistency) Meter LQ500 User Manual

Toshiba density (consistency) meter user guide

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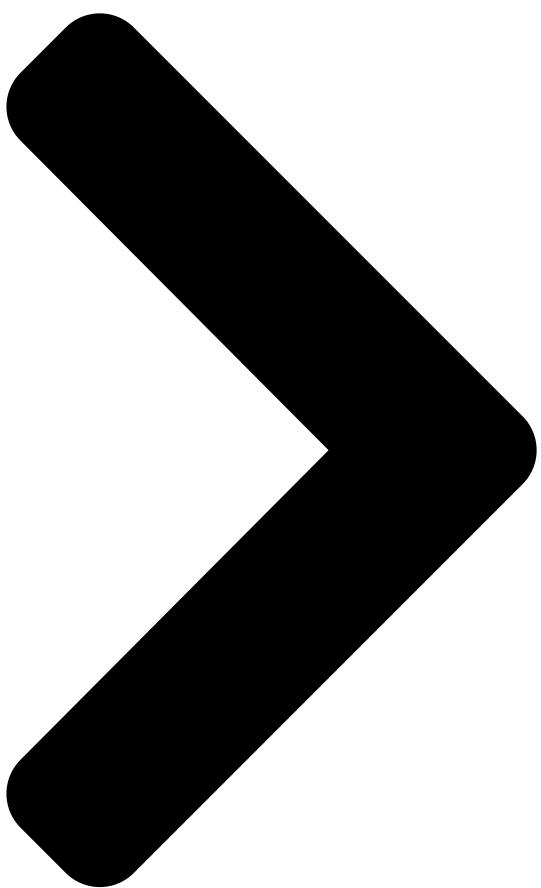
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Density (Consistency) Meter

Introduction

The LQ500 density (consistency) meter uses microwave phase shift technology to determine concentrations of solids in the material to be measured flowing through pipes. It can perform a stable and realtime density (consistency) measurement because this technology is not affected by flow velocity along with fluid color, and also is not easily affected by contaminants and low process pressure rate. As the LQ500 has no moving parts, it is reliable and virtually maintenance free.

Since the output of the LQ500 is theoretically linear, it



can be applied to a wide range of density (consistency) measurement.

<Notice>

The LQ500 requires a full pipe to measure the density (consistency). Contact Toshiba before installation in the following cases:

<Possibility of unfilled condition>

- (a) When it is installed at the discharge of a pump.
- (b) When installation is horizontal, and unfilled condition occurs inside the pipe.
- (c) A process where the pipe becomes unfilled when the operation is stopped.

Cable for power supply
(Detector/converter)

Figure 1. LQ500 Configuration Diagram

Standard Configuration

- Density (Consistency) Meter:
(Detector and converter separate mounted)
- Accessories:

Table 1. Standard Accessories

Items
Power supply
Between detector and cable
Communication
Between detector and cable
Fuse
(glass tube, 5.2 dia. x 20 mm)
Document

Note 1: Need to prepare a power supply cable for the LQ500.

Refer to the section of cable specifications at the overall specifications in detail.

External Sync control
contact input

DI / DO

Density (consistency)
measurement output 4-20mA

AC power supply

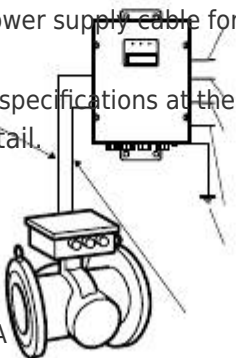
Ground resistance

100 ohm or less

Cable for communication
(Detector/converter)

1 set

1 set (see Table 1 below)



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Specifications

Quantity

10 m

converter (*1)

(32.8 ft)

10 m

converter (*1)

(32.8 ft)

2A(T), 250 V

2

Instruction manual

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Figure 2. LQ500 Density (consistency) Meter

Specifications

Overall Specifications

Measurement method:

Microwave phase difference method

Measurement range:

Meter size

Span (*2)

2 to 50 %TS (*1) 1 to 50%TS (*1)

Lower limit setting

range (4 mA)

Upper limit setting

range (20 mA)

Setting increments

*1 TS: Total Solids

*2 Span = Upper range - Lower range

*3 The material to be measured must be fluid and be filled evenly with no voids.

Repeatability:

Meter size

Repeatability

Note 1 : Above values are the results of commuting ability in the phase measurements of the converter.

Note 2 : Density (consistency) determination repeatability for sample reagent

Meter size

For the full

scale value of

Density

2%TS or

(consistency)

greater

determination

For the full

repeatability

scale value of

less than 2%TS

*The characteristics of sample reagent has errors due to sample tests such as uneven density (consistency)

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distribution.

*Full scale is the maximum value in the measurement

LQ500

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80 to 300 mm

50 mm (2")

(3" to 12")

0 to 48%TS

0 to 49%TS

2 to 50%TS

1 to 50%TS

0.1%TS

80 to 300 mm

50 mm (2")

(3" to 12")

±0.02%TS

±0.01%TS

50 mm

80 to 300 mm

(2")

(3" to 12")

±2%FS

±2%FS

±4%FS

No. E JL- 106A



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Related Manuals for Toshiba Density (Consistency) Meter LQ500

[Measuring Instruments Toshiba LQ500 Operation Manual](#)

Density meter (113 pages)

[Measuring Instruments Toshiba LQ500 Installation Manual](#)

Density (consistency) meter (13 pages)

[Measuring Instruments Toshiba LF410 Manual](#)

Field intelligent device – mount-anywhere series - wafer electromagnetic flowmeter (15 pages)

[Measuring Instruments Toshiba Electromagnetic Flowmeter LF470/LF612 Specification Sheet](#)

Electromagnetic flowmeter (8 pages)

[Measuring Instruments Toshiba LF470 Quick Start Manual](#)

Electromagnetic flowmeter field intelligent device (8 pages)

[Measuring Instruments Toshiba LF434 /LF620 Manual](#)

Electromagnetic flowmeter (12 pages)

[Measuring Instruments Toshiba Sanitary Electromagnetic Flowmeter TIC-LF494B User Manual](#)

Field intelligent device series sanitary electromagnetic flowmeter (17 pages)

[Measuring Instruments Toshiba LF516 Instruction Manual](#)

Electromagnetic flowmeter capacitance type (157 pages)

[Measuring Instruments Toshiba LF232*F Series Instruction Manual](#)

Electromagnetic flowmeter for partially-filled pipes 6" to 24" (150 to 600 mm) (8 pages)

[Measuring Instruments Toshiba LQ300A00 Series Operation Manual](#)

The insertion type density meter (110 pages)

[Measuring Instruments Toshiba LQ500B Operation Manual](#)

Density meter (124 pages)

[Measuring Instruments Toshiba LF620 B Series Instruction Manual](#)

Electromagnetic flowmeter converter (167 pages)

[Measuring Instruments Toshiba LF654 Instruction Manual](#)

Lf654 series electromagnetic flowmeter detector (51 pages)

[Measuring Instruments Toshiba RD-97DTKB Owner's Manual](#)

Hdd & dvd video recorder (96 pages)

[Measuring Instruments Toshiba GF630 Manual](#)

Electromagnetic flowmeter (18 pages)

[Measuring Instruments Toshiba GF642 Manual](#)

Electromagnetic flowmeter (11 pages)

Summary of Contents for Toshiba Density (Consistency) Meter LQ500

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(consistency) measurement. <Notice> The LQ500 requires a full pipe to measure the density (consistency). Contact Toshiba before installation in the following cases: <Possibility of unfilled

condition> (a) When it is installed at the discharge of a pump.

[Page 2](#) LQ500 range, which is the upper limit setting range. Resolution: Meter size 50 mm (2") Resolution 0.002%TS Note 1: Above values are the results of commuting ability in the phase measurements of the converter. Note 2: Density (consistency) determination resolution for sample reagent; 50 mm Meter size (2")

[Page 3](#) Note 2: The LQ500 density (consistency) measurement for application where liquids containing highly conductive particles such as active carbon and metal particles may be affected. Consult Toshiba for detail when the measuring liquid contains such particles. Wetting materials: Name SCS14A cast (equivalent to...

[Page 4: Installation](#)

LQ500 hours when programming every 5 minutes. • Moving average function: In order to keep the average density (consistency) output, or in order to suppress the deflection width of the output. It helps for density (consistency) control. <Specification> Enable to determine a number from 1 to 99. •...

[Page 5](#) 74 (2.9") 234 (9.2") Converter communication port Converter power supply cable port Contact signal I/O port (2) Reserved Figure 4. LQ500 Converter outline dimensions ■ Installation Precautions (1) Install the LQ500 in an environment free from vibration and corrosive gases and in a place which allows easy on-site maintenance.

[Page 6](#) LQ500 (7) Install an adjustable piping mechanism if there is a possibility that the detector pipe may not fit between mating flanges. (8) Install the LQ500 in a place where enough water pressure is applied. Therefore, it is recommended that the LQ500 be installed as far away as possible from the pipe outlet opened to atmosphere.

[Page 7](#) CVVS Conductivity signal input RF part (4-20mA_{dc}) CVVS Communication cable CVVS +24V Power supply cable Notice 1: Do not connect to the "FG" terminals neither communication cable nor power supply cable in the detector side. Notice 2: Either "PE" terminal on the terminal block in the converter on the chassis ground terminal of the unit should be grounded with 100 ohm or less ground.

[Page 8: Ordering Information](#)

LQ500 Ordering Information When ordering the LQ500, refer to Table 4. Type Specification Code. An entry must be made for each of the columns. The following items must also be specified: 1. Fluid characteristics: • Type of material to be measured •...

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Note 2: The differences between standard type are RTD sensor and Applicator window. Note 3: Toshiba recommends to using our specified cable. ISO9001 and ISO14001 are certified. Misuse of this product can result in damages to property or human injury.

This manual is also suitable for:

Lq500