



Toshiba Sanitary Electromagnetic Flowmeter TIC-LF494B User Manual

Field intelligent device series sanitary electromagnetic flowmeter

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Table Of Contents
17

--	--

•

[Table of Contents](#)

•

Bookmarks

--

Quick Links

[1 Specifications](#)

[2 Communications Output](#)

[3 Installation](#)

[4 Ordering Information](#)

[Download this manual](#)



Field Intelligent Device Series

Sanitary Electromagnetic Flowmeter

TOSHIBA
Introduction

Sanitary electromagnetic flowmeters LF490 series are

designed for applications handling food and beverages.

Sanitary flowmeters must be structured in such a way

that operation and handling is simple, easy and

thorough for the purpose of sanitary control such as

cleaning (CIP/SIP), sterilization and drying. The

sanitary flowmeter has features provided with normal

electromagnetic flowmeters and by using sanitary

fittings for pipeline connections fluid does not remain



in any place along the detector pipeline. Therefore, it is fit for flowrate measurement for food and beverages.

The electromagnetic flowmeter uses Faraday's Law of electromagnetic induction to measure the process flow.

The device consists of two units: a detector, through which the fluid to be measured flows and in which

low-level signals proportional to flow rates are

obtained; and a converter, which supplies excitation

current to the detector, and amplifies the signals from

the detector and then processes and converts the

signals into the 4-20mA dc current signal or

communication signal. With the unique patented

Mount-Anywhere magnetic field distribution

technology, the meter is highly immune to upstream

flow disturbances. Combined with a multi-functional

converter LF610 (combined type) or LF612 (separate

type) equipped with its patented Noise-Sentry original

noise-suppression circuit and advanced algorithms.

The LF490 has a very high tolerance to noise, giving

the unit a very stable output even for slurry fluid

measurement. IR (Infrared) switches enable parameter

setting of the converter without removing the cover.

Flow direction can be set in either way, and its unique

128 x 128 dot matrix LCD display allows the LCD to

be rotated electronically to 90, 180 and 270 degrees

without opening the cover.

Converter

I/O

Power supply

Detector

Combined type

LF490/LF610

LF494/LF610F

Figure1. Configuration

Converter

Signal cable

Terminal box

Excitation cable

Detector

Separate type

LF490/LF612

LF494/LF612F



ManualsLib.com



LF490/LF610

LF494/LF610F

Figure 2. LF490 series flowmeters

The AF900 hand-held terminal (HART* communicator) can be used to communicate with the flowmeter from a remote place. PROFIBUS-PA* interface is available as an option.

*1: HART protocol (Highway Addressable Remote Transducer) is a communication protocol for industrial sensors recommended by the HCF (HART Communication Foundation).

*2: PROFIBUS is the communication protocol for factory and process automation that the PROFIBUS Organization recommends. Instead of analog control with a conventional analog signal (4-20mA), it is the fieldbus which digitizes all signals. Flowmeters support PROFIBUS-PA.

Power

supply

I/O

LF494/LF610

LF494/LF612

1S to 4S (25 to 100 mm)

LF490

LF612

LF494

LF612F

Certification

number

Z01207

1

TIC-LF494B

2



ManualsLib.com

[Table of Contents](#)

[Next Page](#)

1
2
3
4
5

Related Manuals for Toshiba Sanitary Electromagnetic Flowmeter TIC-LF494B

[Plumbing Product Toshiba LF494 Instruction Manual](#)

Electromagnetic flowmeter (157 pages)

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

Electromagnetic flowmeter (8 pages)

[Plumbing Product Toshiba LF610 Series Operation Manual](#)

Electromagnetic flowmeter (2 pages)

[Measuring Instruments Toshiba Electromagnetic Flowmeter Converter TIC-LF232A Product Manual](#)

Electromagnetic flowmeter converter (8 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 GF630 Manual](#)

Electromagnetic flowmeter (18 pages)

[Measuring Instruments Toshiba LF654 Instruction Manual](#)

Lf654 series electromagnetic flowmeter detector (51 pages)

[Measuring Instruments Toshiba LF410 Manual](#)

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

[Measuring Instruments Toshiba GF642 Manual](#)

Electromagnetic flowmeter (11 pages)

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

Electromagnetic flowmeter converter (167 pages)

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

Electromagnetic flowmeter (12 pages)

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

Hdd & dvd video recorder (96 pages)

[Measuring Instruments Toshiba LF622 Quick Start Manual](#)

Magmeter (13 pages)

[Measuring Instruments Toshiba LF620F Instruction Manual](#)

Electromagnetic flowmeter converter (162 pages)

[Measuring Instruments Toshiba LQ500 Installation Manual](#)

Density (consistency) meter (13 pages)

Summary of Contents for Toshiba Sanitary Electromagnetic Flowmeter TIC-LF494B

and beverages. Sanitary flowmeters must be structured in such a way that operation and handling is simple, easy and thorough for the purpose of sanitary control such as cleaning (CIP/SIP), sterilization and drying.

[Page 2: Specifications](#)

±0.2 % of Rate Accuracy: * This pulse output error result is established under standard operating conditions at Toshiba's flow calibration facility, Fuchu Japan. (NIST Traceable). * Individual meter measurement error may vary up to ±0.5% of Rate at 1.64 ft/s (0.5m/s) or more and ±0.3% of rate ±0.039 inch/s (1mm/s) at 1.64ft/s (0.5 m/s) or less.

[Page 3: Communications Output](#)

Zero span calibration tool allows unit to be re-calibrated and verified using an internal software program. (For more information contact Toshiba International Corp.) Conditions when power fails: Parameter setting values are stored in non-volatile memory and the values will be restored when the power returns to normal condition.

[Page 4: Surge Protection](#)

• Digital output: OFF • LCD display: No display • PROFIBUS: No communication Power supply: One of the following can be selected: • 100 to 240Vac, 50/60Hz (std.) (allowable voltage 80 to 264Vac) • 24Vdc (allowable voltage 18 to 36Vdc) •...

[Page 5: Installation](#)

Installation Dimensions (Combined type) Clamp connection 8.86(225) 1.42(36) 5.16(131) Note1: Clamp (Joint) size is different from meter size of LF490 and LF494. See the following table. Note2: Cable glands are not provided for cFMus approved type. For English unit Meter size Joint size (inch) (ISO2852)

[Page 6](#) Dimensions (Separate type) Clamp connection 3.46(88) 1.57(40) 1.38(36) R(PT)1/2 Male screw (L2) ΦD□ Clamp (Joint) size is different from meter size Note1: of LF490. See the following table. Cable glands are not provided for cFMus Note2: approved type. For English unit Meter size Joint size (inch)

[Page 7](#) 101.6 2.85 119.0 72.3 76.3 100 (4S) 5 1/2S 101.6 5.6 155.0 97.6 101.6 Note1: This special Ferrule, which fits on TOSHIBA LF490 and LF494, can be fastened to ISO2852 clamp. Tri-clamp® is available to use the same joint size instead of ISO2852 clamp except meter size 4"...

[Page 8: External Connections](#)

4 – φ0.43(φ11) 4□φ 11 5.94(151) Attachment □□□□ 2.91(74) LCD display 74 ±0.3 LCD □□□ IR Switch □□□□□□ Cable ground □□□□□□□□ □□A Figure 8. Separate type converter LF612 and LF612F External Connections Combined type LF490/LF610 and LF494/LF610F flowmeters Ground terminal Intermediate voltage (IV) wire, 5.5mm...

[Page 9](#) Separate type LF490/LF612 and LF494/LF612F flowmeters Terminal board Thick walled steel conduit Signal cable (2-wire shielded hard-rubber sheathed cable) Connected detector Excitation cable (3-wire shielded hard-rubber cable) Figure 10. Separate type LF490/LF612 and LF494/LF612F flowmeters wiring Diagram Table 1. LF610, LF610F, LF612 and LF612F Converters Signal Table Symbol L1 (□) L2 (□)

[Page 10: Wiring Precautions](#)

Wiring Precautions (1) Explosion proof type flowmeters are not provided cable glands. Refer to the part Cable connection port at detector and converter. (2) Connect the grounding wire (IV wire 5.5mm² or more) to a good earth ground (100 Ω or less ground resistance).

[Page 11: Ordering Information](#)

4. I/O function setting 5. Ordering scope: Flow calibration data: (required or not) 6. Other items Specifications other than standard items Consult a Toshiba representative before ordering when choosing materials of the wetted parts such as lining, electrodes, and grounding rings.

[Page 12](#) Note2: Tri-clamp® is available to use the same joint size instead of ISO2852 clamp except meter size 100mm (4"). Note3: Toshiba's original ferrule is required to use for LF490 series detectors to keep just fitting between the joint in case of choosing clamp type.

[Page 13](#) Table 6. Specification Code for converters Model Specification Code 1 2 3 4 5 6 7 8 9
10 11 12 13 14 L F 6 1 Code explanation: : Standard Table 7. Type Specification Code for
Maintenance Parts Meter size Joint size inch(mm) (ISO2852)

[Page 14](#) TIC-LF494B This Page Intentionally Blank...

[Page 15](#) TIC-LF494B This Page Intentionally Blank...

[Page 16](#) Specifications are subject to change without notice. Misuse of this product can result
in damages to property or human injury. Printed in Japan 2008-5 (TDOC) Read related manuals
carefully before using this product. © TOSHIBA Corporation 2008 All Rights Reserved.
<http://www.toshiba.com/ind/TIC-LF494B...>

This manual is also suitable for:

[Lf490Lf610Lf494Lf612](#)