



Toshiba LF434 /LF620 Manual

Electromagnetic flowmeter

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Field Intelligent Device – Mount Anywhere Series - Flanged Electromagnetic Flowmeter

Introduction

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 4-20 mAdc current signal or communication signal. With the unique patented Mount-Anywhere magnetic field distribution technology, the meter is

TOSHIBA



highly immune to upstream flow disturbances.
 Combined with a multi-functional converter LF620
 (combined type) or LF622 (separate type) equipped
 with its patented Noise-Sentry original noise-
 suppression circuit and advanced algorithms. The
 LF430 has a very high tolerance to noise, giving the unit
 a very stable output even for slurry fluid measurement.

TOSHIBA

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. The terminal block in LCD side
 make easy to wire in case of the combined type.

*

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

** DevComm2000 Smart Device Communicator available
 through TIC for performing HART device configurations on
 PC or laptop.

*

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

*

Modbus is the communication protocol that Modicon Inc.
 developed. Physical layer is RS485.

Combined type

Figure1. Configuration

Separate type

1/2" to 24" (15 to 600 mm)

LF430/LF620

LF434/LF620F

Figure2. LF430 Mount-Anywhere series

Flowmeters

Specifications

Overall Specifications

Measurement range in terms of flow velocity:

0 -1.0 ft/s to 0 - 32.8 ft/s (0 - 0.3 m/s to 0 -10 m/s)

0 - 0.3 ft/s to 0 - 1.0 ft/s (0 - 0.1 m/s to 0 - 0.3 m/s)

range is available as an option.

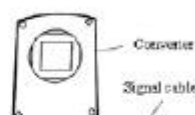
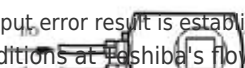
Accuracy:

< 1/2" to 18" (15mm to 450mm)>

±0.2 % of Rate

*

* 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 $\pm 0.5\%$ of Rate at 1.64 ft/s (0.5m/s) or more and $\pm 0.3\%$ of rate ± 0.039 inch/s (1mm/s) at 1.64 ft/s or less.

* Current output: plus $\pm 8\mu\text{A}$ (0.05% of span.)

* Refer to individual calibration data for each individual meter's measurement error.

< 20" and 24" (500mm and 600mm)>

$\pm 0.3\%$ of Rate

*

* This pulse output error result is established under standard operating conditions at Toshiba's flow calibration facility, Fuchu Japan.

* Individual meter measurement error may vary up to $\pm 0.5\%$ of Rate at 3.28 ft/s (1.0m/s) or more and $\pm 0.3\%$ of rate ± 0.079 inch/s (2mm/s) at 3.28 ft/s (1.0m/s) or less.

* Current output: plus $\pm 8\mu\text{A}$ (0.05% of span.)

* Refer to individual calibration data for each individual meter's measurement error.

LF434 /LF620

LF434 /LF622

LF430

LF622

LF434

LF622F

Cert. No.

Cert. No. PM09896

Z01207

For Hard rubber

lined flowmeter

TIC-LF434H



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Related Manuals for Toshiba LF434 /LF620

[Plumbing Product Toshiba LF404 Instruction Manual](#)

Electromagnetic flowmeter (158 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 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 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)

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Magmeter (13 pages)

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Electromagnetic flowmeter converter (162 pages)

[Measuring Instruments Toshiba LQ500 Installation Manual](#)

Density (consistency) meter (13 pages)

[Measuring Instruments Toshiba LQ500B Operation Manual](#)

Density meter (124 pages)

Summary of Contents for Toshiba LF434 /LF620

[Page 1](#) PROFIBUS is the communications protocol for factory and * This pulse output error result is established under standard process automation that the PROFIBUS Organization operating conditions at Toshiba's flow calibration facility, recommends. Instead of analog control with a conventional Fuchu Japan. (NIST Traceable).

[Page 2](#) TIC-LF434H Note: The test results were obtained and demonstrated at Fluid conductivity: 5µS/cm minimum TOSHIBA's flow calibration facility, Fuchu Japan. Fluid temperature: Drinking water approvals: 14 to 248 °F (-10 to +120 °C): Hard rubber liner: NSF Teflon PFA lined flowmeter Note: Hard rubber liner is available from 4"...

[Page 3](#) TIC-LF434H Cable connection port: for separate type detectors. 150Vac (peak to peak), 100mA maximum Note: DO2 cannot be used with the Modbus Cable gland — communication. LF430: Provided as standard, R(PT) 1/2 male DO1 and DO2 functions — One of the following screws.

[Page 4](#) Mag-Prover "Field re-verification" – direction will not cause any defect to unit. Toshiba's Zero span calibration tool allows Note: Avoid using the flowmeter in an environment with unit to be re-calibrated and verified using an constant vibration. internal software program (For more...

[Page 5](#) Installation Dimensions Unit: inch (mm) Note1: Eye bolts are provided at the top for flowmeters sized 8" (200mm) or above, and further, a roll-prevention base is provided for flowmeters sized 10" (250mm) or larger. Note2: Cable glands are not provided for LF434 of cFMus approved type. Refer to the part Cable connection port at detector.

[Page 6](#) TIC-LF434H Unit: inch (mm) 3.46 (88) 4.96 (126) 1.38 (35) 3.58 (91) 1.57 (40) (L1) Note1: Eye bolts are provided at the top for flowmeters sized 8" (200mm) or above, and further, a roll-prevention base is provided for flowmeters sized 10" (250mm) or larger. Note2: Cable glands are not provided for LF434 of cFMus approved type.

[Page 7: External Connections](#)

TIC-LF434H Attachment LCD display I/O cable ground Excitation cable ground Plate Power supply Signal cable ground cable ground Option cable ground Note: Cable glands are not provided for LF622F cFMus approved type. IR Switch Refer to the part Cable connection port at detector. Figure 5.

[Page 8](#) TIC-LF434H Separate type LF430/LF622 flowmeter and LF434/LF622F flowmeters Instrument panel : Ordered separately Grounding with 100Ω or less IV wire 5.5mm or more ground resistance Power switch Grounding with 100Ω or less (External double-pole power switch) ground resistance Power supply Thick walled steel conduit Current output (4~20mA) Signal cable...

[Page 9: Wiring Precautions](#)

TIC-LF434H Wiring Precautions (6) The electromagnetic flowmeter is not equipped with (1) Explosion proof type flowmeters are not provided terminating resistors. Use the terminating resistor with cable glands. unit for PROFIBUS-PA or junction box, if Refer to the part Cable connection port at detector necessary.

[Page 10: Ordering Information](#)

Specifications other than standard items 150 (6) 3.144 2,500 29.283 200 (8) 2.653 4,500 29.649 Consult a Toshiba representative before ordering 250 (10) 3.395 7,000 29.517 when choosing materials of the wetted parts such as 300 (12) 3.537 10,000 28.283 lining, electrodes, and grounding rings.

[Page 11](#) TIC-LF434H Table 6. Specification Code (Flange type detector LF430 Series) Model Specification Code Detector category Description Normal type Class 1 Div 2 9 10 11 12 13 14 Gr.-A Gr.-B Gr.-C Gr.-D Gr.-E √ √ L F 4 Normal specification type √...

[Page 12](#) Note4: EPDM rubber lining or Hard rubber lining is available to choose only in this specification. Note5: Consult Toshiba before ordering when choose materials at the wetting parts. Note6: Check Table 1 whether your chosen meter size meets this directive or not when the meter is shipped to EU. If yes, choose this code.

This manual is also suitable for:

[Lf434 /lf622Lf430/lf620Lf430/lf622Lf430/lf622fLf430/lf620fLf434/lf622f](#) ... [Show all](#)