



VFM-T3 Quick Start Guide

This Quick Start Guide contains an explanation of only the basic system calibration of the VFM-T3, and must be used in conjunction with the “VFM-T3 Instruction Manual.”

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Introduction

This “Quick Start Guide” provides an easy-to-understand explanation of only the most basic instructions to display flow rate.

For detailed settings or operation, see the “Instruction Manual”.

The VFM-T3 is an outstanding steam flow computer that accurately measures the flow rates of steam in various conditions.

It offers an extremely varied number of display options, including mass flow rate, corrected volume, energy flow (rate and total), temperature, pressure, specific weight and enthalpy.

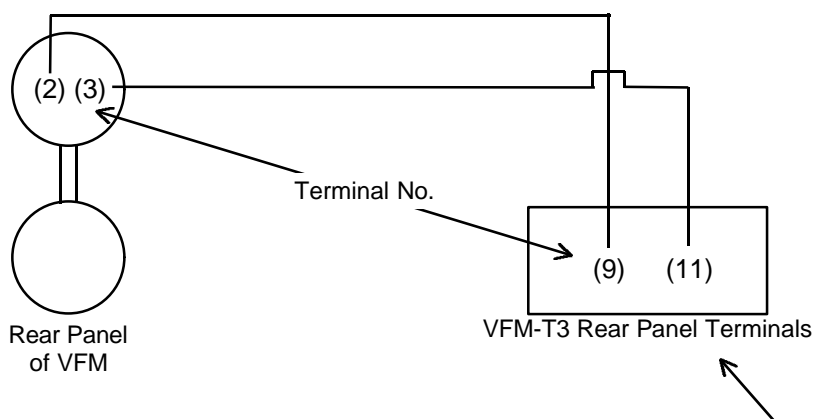
This guide contains information on wiring connections, calibration and operation.

Be sure to calibrate the unit before use.

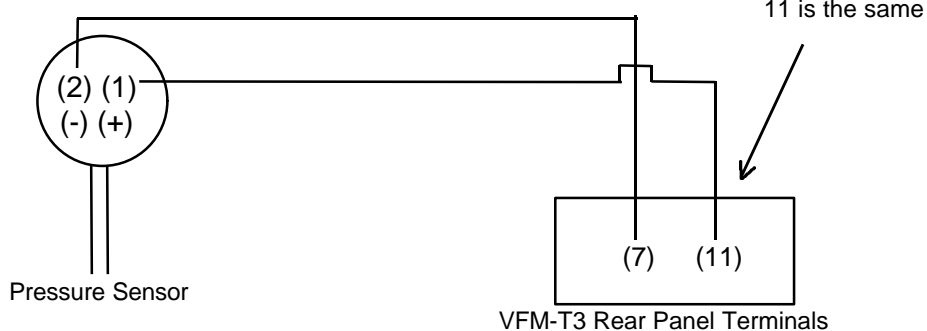
Wiring Connections

Use shielded cable for the VFM to VFM-T3 wiring connections. Connect the shielded cable to the T3 ground terminal, and do not connect it to the VFM.

Connection with the VFM



Connection with the Pressure Sensor



NOTE: Check the voltage and wiring connections.

If used incorrectly, accurate flow rates cannot be indicated and there is danger of damage to equipment.

For details on the T3 terminal block, refer to the "Installation" and "Terminal Block Particulars" sections of the separate "Instruction Manual".

Calibration

If the VFM-T3 is not properly calibrated, accurate flow rate measurement cannot be achieved. The flow rate indicated will not be correct.

Be sure to correctly calibrate the unit before use.

The calibration routine can be entered in either of the following 2 ways:

1. By connecting a wire link to the rear terminal strip across terminals (1) and (2).
2. By pressing and holding down the [TOTAL] and [DISPLAY] keys for 6 seconds.

The key switch actions during calibration are as follows:

- [RATE, ▶]: used to change a selected (flashing) digit or a setting option
[TOTAL, ▲]: used to increment the selected digit or change a parameter selection
[RESET]: used to reset the selected digit to zero
[DISPLAY, PROGRAM]: used to step through program sequences

In calibration, there are six main menu items as follows:

1. GENERAL SETUP
2. GAS PARAMETERS
3. FLOW PARAMETERS
4. OPTIONS
5. SYSTEM TEST
6. EXIT

To change the option displayed, press the [RATE] key. When the option to be modified appears, press [DISPLAY] to enter the routine below corresponding to the selected option.

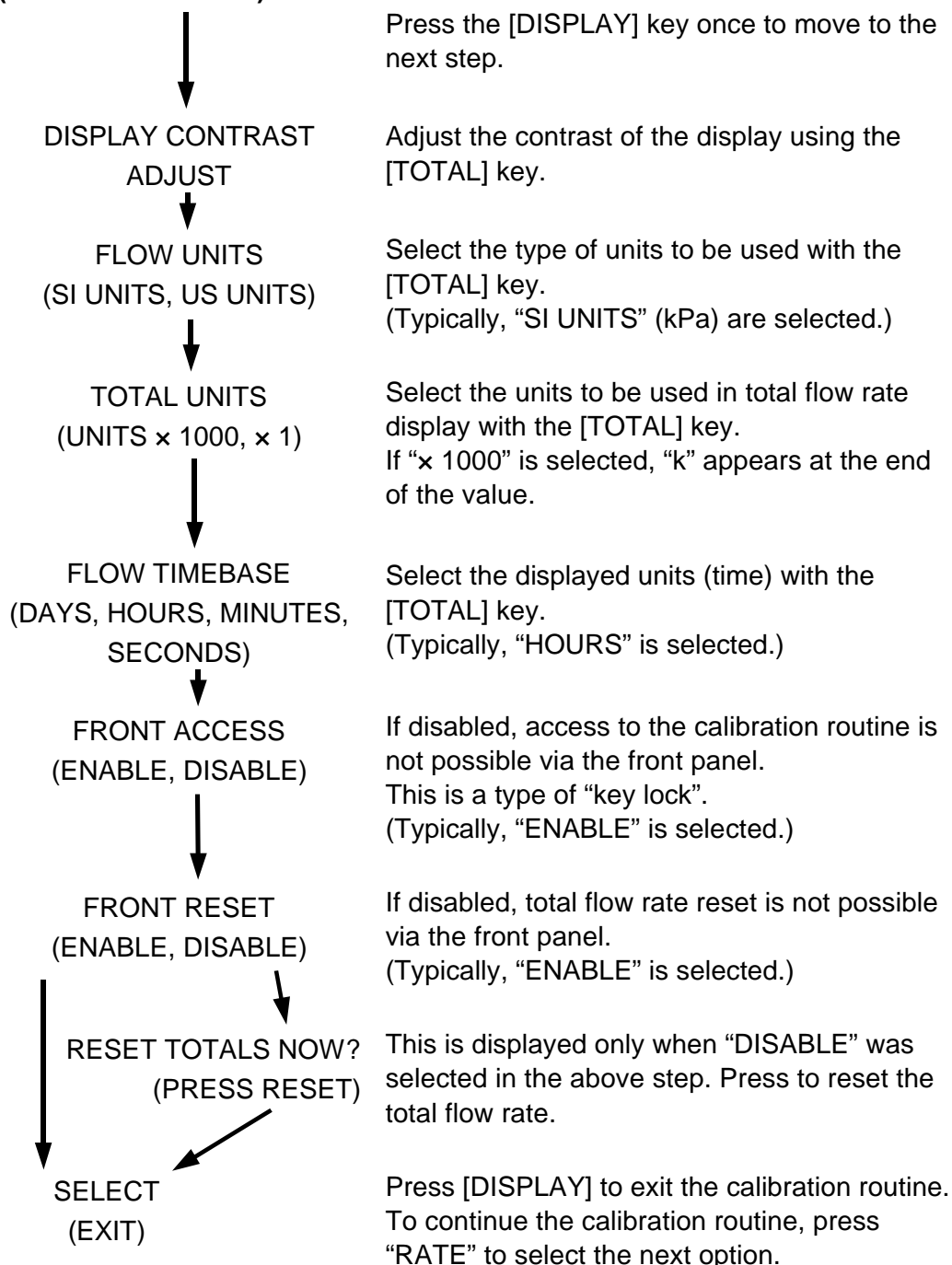
NOTE: This “**Quick Start Guide**” explains only the 3 options that must be set without fail: “GENERAL SETUP”, “GAS PARAMETERS” and “FLOW PARAMETERS”.

Refer to the “Instruction Manual” for details concerning other options.

Perform the calibration slowly and carefully.

General Setup

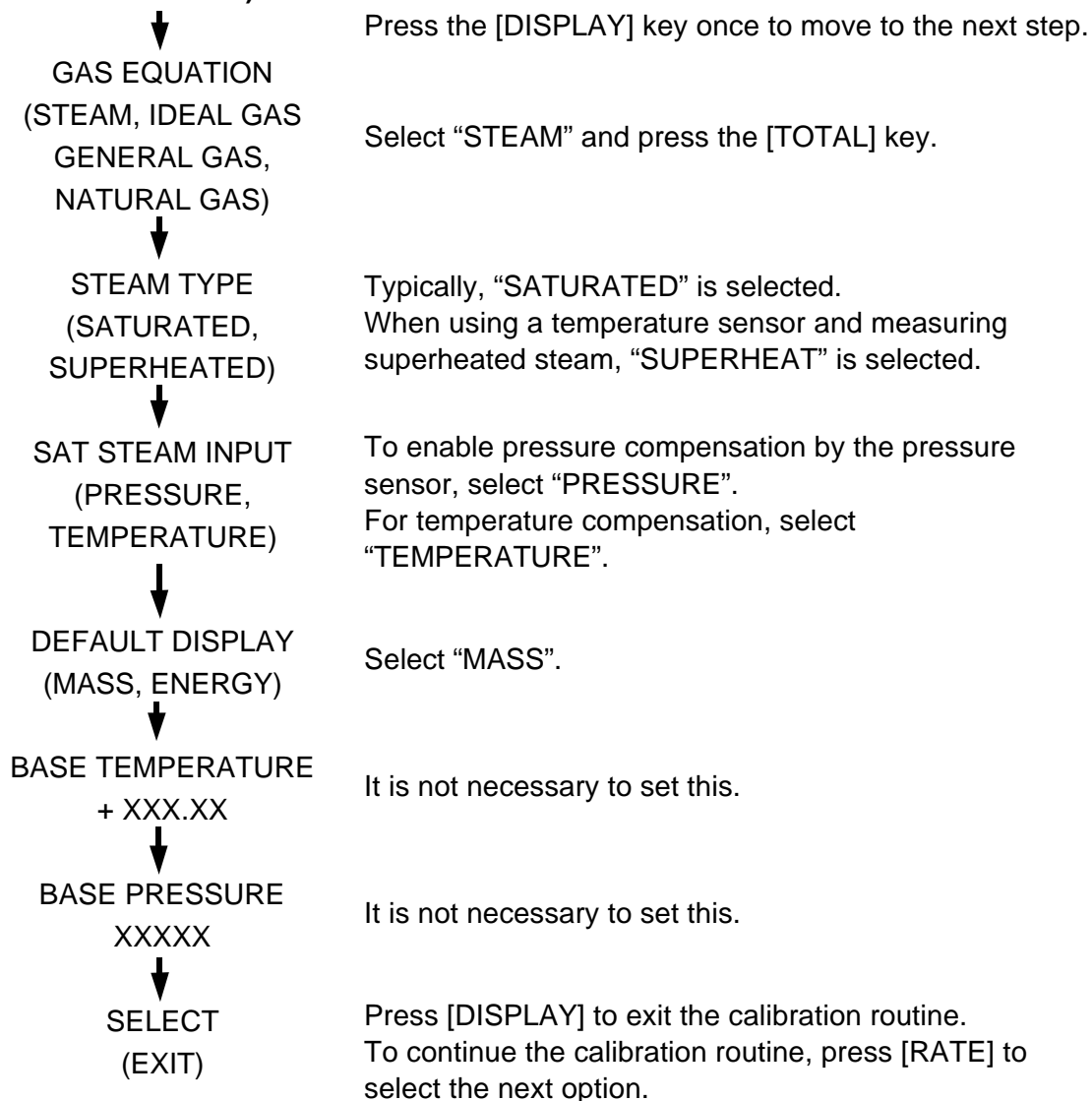
SELECT (GENERAL SETUP)



Gas Parameters

SELECT

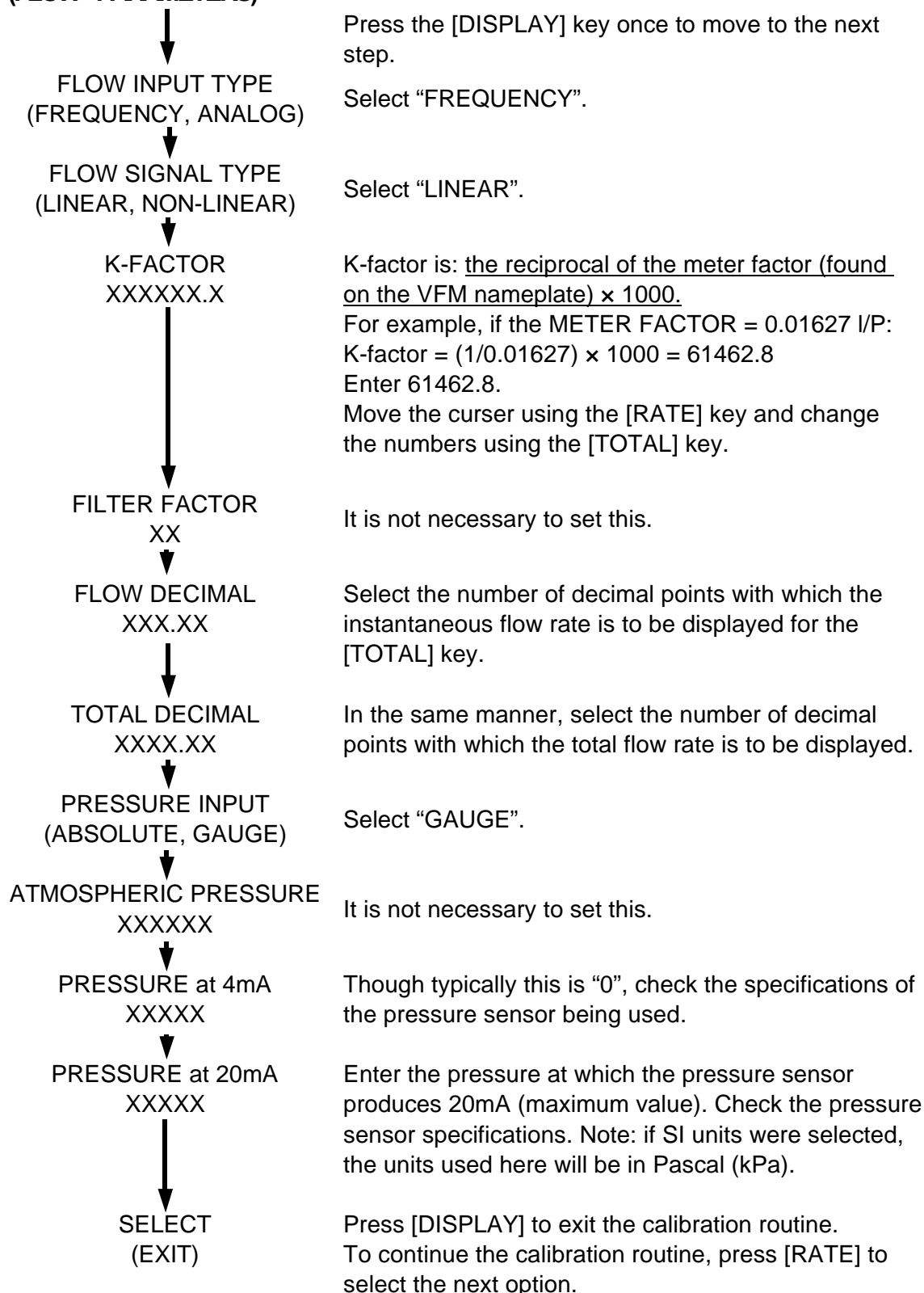
(GAS PARAMETERS)



This is the MOST CRITICAL option!

Flow Parameters

SELECT (FLOW PARAMETERS)



Pascal Conversion

The flow units chosen during the general setup could be either SI units or US units. If SI units were selected, the units to used must be in Pascal (kPa). If using a different system of units, convert them to kPa before entering.

NOTE: If the pressure sensor specifications are in Pascal, enter them without conversion.

A pressure of 1 kg/cm² is converted to 98.06 kPa.

A pressure of 1 bar is converted to 100 kPa.

This completes calibration. For information on detailed settings and functions, see the separate "Instruction Manual".

Front Panel Operation

After calibrating the unit, test the operation by supplying steam flow and checking the flow rate.

To display the instantaneous mass flow, press the "RATE" key; to display the total flow rate, press the [TOTAL] key.

Press the [DISPLAY] key to sequence through the display of mass flow rate, corrected volume, energy flow (rate and total), temperature, pressure, specific weight and enthalpy. (These are only displayed for 5 seconds.)

Troubleshooting

No flow rate is displayed	→	Check the wiring connections, referring to "Wiring Connections".
The displayed value differs greatly from the actual flow rate	→	Check the input values for the "K-FACTOR" in "FLOW PARAMETER" and "PRESSURE at 20mA"
The number displayed for the total flow rate is too large to be read easily	→	Select "x 1000" for the "TOTAL UNITS" in the "GENERAL SETUP". The display units change to tones.

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For detailed settings or operation, see the "Instruction Manual".