



Back Pressure Type Indicator
[Differential Pressure Type]

LE110A

Z-1302 Specification

IMR01C29-E1

NOV. 2024

Relevant instruction manual number: IMR01C23-X□, IMR01C24-E□, IMR01C22-E□

This manual describes items relating only to the Z-1302 specification. (Including ZK-1339 specification)

■ Outline

This instrument with the Z-1302 specification has the following additional specifications.

- Mounting brackets and mounting method are different from the standard model. (Same as the standard model when ZK-1339 is specified)
- The span setting by using the actual liquid was changed.
- The function of setting the Measured value (PV) display to “0” was added.
- The selection of Measured value (PV) display/non-display was added.
- The factory set value of Digital filter and Output differential gap were changed.
- Details of Over-scale and Underscale were changed.
- Performance was changed partly.

■ Model code

Z-1302 or ZK-1339 are added to the end of model codes.

LE110A - □ - □ 6 * □□□□ - □□ **Z-1302 (or ZK-1339)**

■ Mounting method

● When the panel with 1 to 4 mm in thickness

1. Make a rectangular cutout corresponding to the number of instruments to be mounted on panel by referring to the panel cutout dimensions.
2. Since the mounting brackets are already installed on the instrument, insert the instrument into the panel from the panel cutout without removal of the brackets. Firmly fix this instrument to the panel.

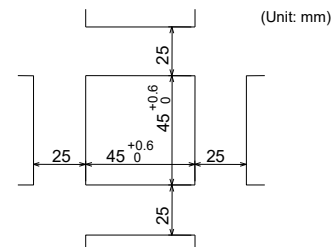
● When the panel with 5 to 9 mm in thickness

1. Make a rectangular cutout corresponding to the number of instruments to be mounted on panel by referring to the panel cutout dimensions.
2. Remove the mounting brackets (two pieces for both top and bottom sides) from the instrument with a blade screwdriver.
3. Insert the mounting brackets into the mounting slots for 5 to 9 mm of the instrument.
4. Insert the instrument into the panel from the panel cutout. Firmly fix this instrument to the panel.

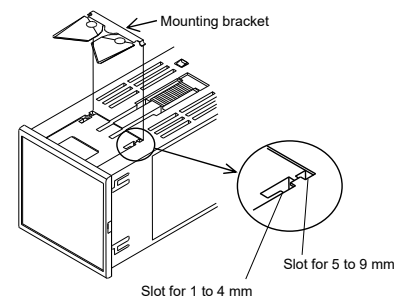


The mounting brackets and the mounting method for the ZK-1339 specification are the same as those in the standard specification. (See IMR01C23-X□)

Panel cutout



Z-1302 specification corresponds to a panel thickness of 1 to 9 mm.



■ Span setting by actual liquid

Method for the span setting by actual liquid, there are two ways of a following.

• Actual liquid two-point correction

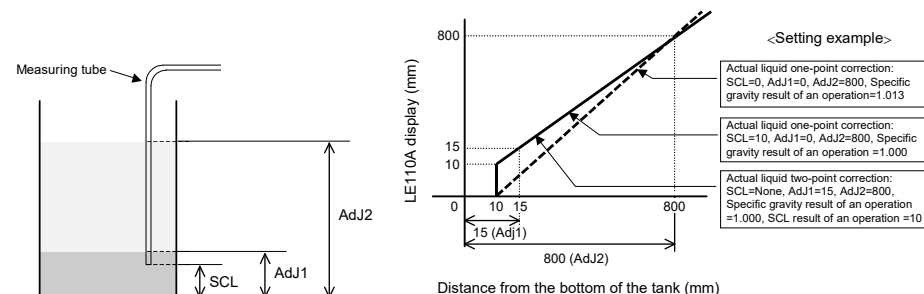
Specific gravity is automatically computed by Scale 1 actual liquid setting (*Adj1*) and Scale 2 actual liquid setting (*Adj2*). In addition, Scale low (*SCL*) is automatically computed and then is updated.

• Actual liquid one-point correction

If Scale 1 actual liquid setting (*Adj1*) is set at 0, specific gravity is automatically computed by Scale 2 actual liquid setting (*Adj2*) and Scale low (*SCL*).



Event if Scale 2 actual liquid setting (*Adj2*) is set at 0, no actual liquid one-point correction is made.



If automatically updated Scale low (*SCL*) needs to be set to any height, re-set Scale low (*SCL*).



Communication identifier

Scale low: XX

Scale 1 actual liquid setting: J1

Scale 2 actual liquid setting: J2

■ Measured value (PV) display to “0”

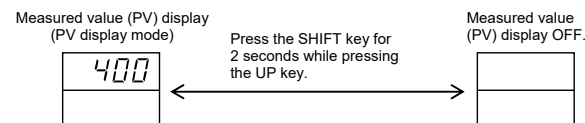
The function of setting the Measured value (PV) display to “0” when the measuring tube does not touch liquid.

■ Measured value (PV) display/non-display

Transfer the Measured value (PV) display/non-display.

<Transfer with LE110A>

At the PV display mode, press the SHIFT key for 2 seconds while pressing the UP key.



<Transfer with communication>
Following communication identifier is added.

(Attribute R/W: Read and Write)

Name	Identifier	Attribute	Description	Factory set value
⋮	⋮	⋮	⋮	⋮
Volume/Level display selection	MM	R/W	0: Volume display 1: Level display This is the identifier enabled when the engineering unit is set to L (liter) or mL.	0
Measured value (PV) display/non-display	DW	R/W	0: Display 1: Non-display	0 ← Added

■ The factory set value of Digital filter and Output differential gap

The factory set value of Digital filter and Output differential gap were changed.

<Parameter>

#1: Factory set value

Symbol	Name	Range	Description	#1
	Digital filter	0: OFF 1 to 100 seconds	In order to lessen the effect of measuring liquid fluctuations (waves) by purge gas, set the time of the first order lag filter.	1
	Differential gap of the output 1-8	0.0 to 10.0 % of span	Sets the differential gap of the output 1-8.	0.1

<Communication Identifier>

(Attribute R/W: Read and Write)

Name	Identifier	Attribute	Description	Factory set value
Digital filter	F1	R/W	0: OFF 1 to 100 seconds	1
Output 1 differential gap	HA	R/W	0.0 to 10.0 % of span	0.1
Output 2 differential gap	HB	R/W	0.0 to 10.0 % of span	0.1
Output 3 differential gap	HC	R/W	0.0 to 10.0 % of span	0.1
Output 4 differential gap	HD	R/W	0.0 to 10.0 % of span	0.1
Output 5 differential gap	HE	R/W	0.0 to 10.0 % of span	0.1
Output 6 differential gap	HF	R/W	0.0 to 10.0 % of span	0.1
Output 7 differential gap	HG	R/W	0.0 to 10.0 % of span	0.1
Output 8 differential gap	HH	R/W	0.0 to 10.0 % of span	0.1

■ Over-scale and underscale

Added the details of error number “Err8” (Input capture hardware error) to the details of over-scale and underscale.

The error number “Err8” was deleted from error display.

Display	Details	Alarm output	Solution
	<ul style="list-style-type: none">Measured value is beyond the effective input range.Input capture hardware error	All points ON <ul style="list-style-type: none">Output state according to the Output type selection.	<ul style="list-style-type: none">Check input pressure valueCheck measuring tube
	<ul style="list-style-type: none">Measured value is below the effective input range.Input capture hardware error	<ul style="list-style-type: none">Output timer setting is invalid.	<ul style="list-style-type: none">Check measuring tube connection.

■ Performance

Measured (display) accuracy:	Within ±(0.2 % +1 digit of span) [Including hysteresis of pressure sensor]
Amount of long-term drift:	±(0.3 % of span) [6 months] ±(0.4 % of span) [One year]
Long-term drift:	Zero drift by long period use of pressure sensor
Temperature characteristics:	Zero output: ±(0.04 % of span)/°C Span output: ±(0.04 % of span)/°C



- Measured (display) accuracy and amount of long-term drift:
Ambient temperature within 23 °C ±1 °C and pressure generation device value by static pressure measurement. (Accuracy of pressure generator: Within 0.1 % of span)
- Span = 0 to 1000 mm H₂O = 0 to 9.807 kPa (Specific gravity of water: 1.000)

