

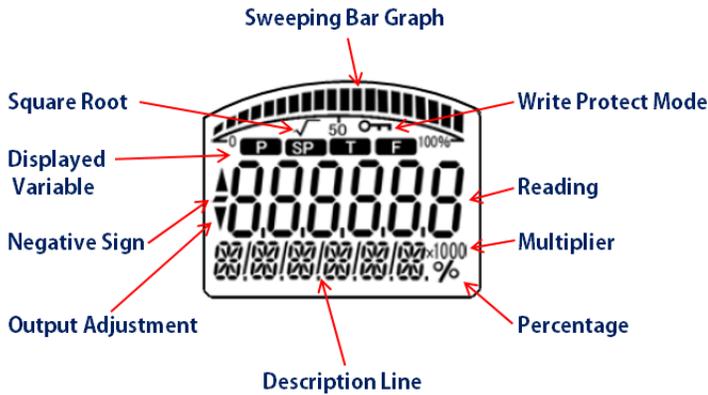
Integral Indicator



Introduction

Yokogawa's series of transmitters offers a local integral indicator that can supply a wealth of information at the transmitter.

Basic



FGP120-01.a



EJA110E with Integral Indicator

Figure 1: Integral Indicator Display

- ⇒ **Square Root** $\sqrt{\quad}$ Indicates that reading being displayed is the Square Root of the pressure reading.
- ⇒ **Displayed Variable:** Indicates what variable is being displayed.

- P** Pressure (Primary Variable)
- SP** Static Pressure (DP transmitters)
- T** Temperature (if equipped)
- F** Flow (if equipped)

- ⇒ **Negative Sign (-):** Indicates when reading is below 0.
- ⇒ **Output Adjustment:** Indicates the direction the digital encoder is adjusting the read.

▲ Increasing Display Value

▼ Decreasing Display Value

- ⇒ **Description Line:** Displays unit of measure of the displayed value or short descriptions of Alarms.
- ⇒ **Percentage:** Indicates that the reading displayed is a percentage of the programmed range.

- ⇒ **Multiplier:** Indicates the use of a multiplier on the value being displayed.

x10	Display x 10
x100	Display x 100
x1000	Display x 1000

- ⇒ **Reading:** Displays reading.
- ⇒ **Write Protect:** Indicates the Write Protect status of the unit. If the key symbol is 'on,' the unit's Write Protection is enabled.
- ⇒ **Sweeping Bar Graph:** Graphical representation of the percentage reading.

Zero-Adjustment Digital Encoder

The display is easily programmed using FieldMate.

FieldMate™

Hart 5	
DTM Works	
> Configuration	
> Local Display	
Disp Out 1	PRES ▼
Disp Out 2	Not Used ▼
Disp Out 3	Not Used ▼
Disp Out 4	Not Used ▼
Disp Pres % fnctn	Linear ▼
Disp Pres % Reso	Normal ▼
Pres display point	2 ▼
Engr LRV	
Engr URV	
Engr Unit	
Engr exp	x1 ▼
Engr point	1 ▼
SP disp point	2 ▼
Bar Indicator	On ▼
Hart 7	
DTM Works	
> Detailed Setup	
> Display Condition	
> Disp Select	
Disp Out 1	PRES ▼
Disp Out 2	Not Used ▼
Disp Out 3	Not Used ▼
Disp Out 4	Not Used ▼
> P disp condition	
Pres display point	2 ▼
Disp Pres % fnctn	Linear ▼
Disp Pres % Reso	Normal ▼
> SP disp condition	
SP disp point	2 ▼
> Engr disp range	
Engr LRV	
Engr URV	
Set Engr Unit	
Engr exp	x1 ▼
Engr point	1 ▼

Figure 2: FieldMate Layout

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Display Selection / Cyclic Display

The indicator has five displays that are available. They are *Input Pressure*, *% of Range*, *User Set Scale*, *Input Static Pressure*, and *% of Static Pressure Range*. (See Figure 3)

The displays are selected using “Disp Out 1” through “Disp Out 4”. The Display will cycle through the different display in the order which they are selected. Only define the display needed. If you do not need four displays, leave the disp setting as *Not Used*.

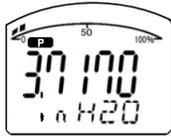
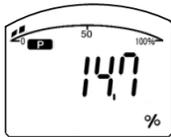
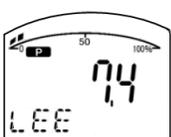
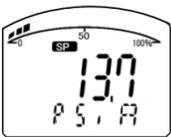
Input Pressure (PRES)		Indicates values of input pressure with the limits of -99999 to +99999. Example Screen: 3.7170 inH ₂ O
% of Range (PRES %)		Indicates input pressure in -2.5% to +110% range depending on the set range (LRV - URV). Example Screen: 14.7% of input span
User Set Scale (ENGR. PRES)		Indicates input pressure values in units of measure specified by user. Example Screen: 7.4 Lee
Input Static Pressure (SP)		Indicates input static pressure with indication limits of -99999 to +99999. Example Screen: 13.7 psia
% of Static Pressure Range (SP %)		Indicates input static pressure in -10% to +110% range depending on the set range (SP LRV and SP URV) Example Screen: 15.0 % of Static Pressure

Figure 3: Available Displays

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- ⇒ **Input Pressure (PRES):** Indicates the value of the primary variable. This value is slaved to the Analog Output of the primary available. The unit of measure is set in the *Analog Output* menu of DTM works.
- ⇒ **% of Range (PRES %):** Indicates the percentage of the range being measured of the primary variable. The LRV and URV are set in the *Analog Output* menu of DTM works.
- ⇒ **Input Static Pressure (SP):** Indicates the value of the static pressure. The unit of pressure, gauge/ absolute pressure, and low-pressure side/ high-pressure side are selectable in the *Static Pressure Sensor* menu of DTM works.
- ⇒ **% of Static Pressure (SP%):** Indicates the percentage of the static pressure range being measured. The SP LRV and SP URV are set in the *Static Pressure Sensor* menu of DTM works.
- ⇒ **User Set Scale (ENGR. PRES):** Indicates the value as set-up by the customer. This display can be used to display the pressure in a different unit of measure as on the *Input Pressure* display, indicate flow, or any custom unit of measure. All aspects of this display can be setup on the *Local Display* menu of DTM works.



Display Resolution

For the Pressure, % Pressure, and Static Pressure measurements; the number places after the decimal can be set. (See Figure 2)

The "Pres Disp point" can set the Input Pressure to 0, 1, 2, 3, or 4 places.

The "SP Disp point" sets the Static Pressure to 0, 1, 2, 3, or 4 places.

The "Disp Pres % Reso" offers two settings:

- Normal** Displays one digit after decimal
- High Resolution** Displays two digits after decimal

Integral Indicator Display Mode

The mode setting of the output signal and the integral indicator can be set independently from each other. The mode can be set for the display using the "Disp Press % fnctn". It can be selected as *Linear* or *Square Root*. When Square Root is selected the "√" is displayed. (See Figure 2)

User Setting of Engineering Unit and Scale

When User Set scale is selected as one of the displays, the values need to be programmed into the unit. (See Figure 2)

- Engr LRV** Sets Lower Range Value
- Engr URV** Sets Upper Range Value
- Engr Unit** Sets Engineering Unit*
- Engr exp** Sets Multiplier
- Engr point** Sets number of places after decimal

Up to six alphanumeric characters and spaces. One slash (/) may also be used. The symbols # % & < > . * : + - , ' () may not be used.

▪ Set Up (Physical)

The display can be rotated within the housing to ensure that the proper orientation to the viewer regardless of the way the transmitter is installed.

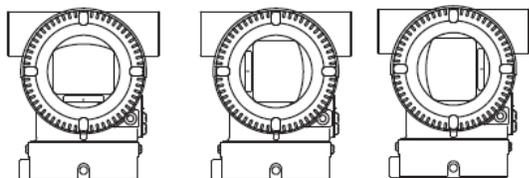


Figure 4: Possible Display positions.

Refer to the Users Manuals for the procedure to rotate the display.

▪ Settings when Shipped

Item	Setting
Display Selection*:	% of Range (PRES %)
Display Mode*:	Linear
Cyclic Display:	Not set up
Display Resolution:	
Input Pressure:	4
Input Static Pressure:	4
% of Range:	Normal
User Set Scale:	Not set up

* Unless specified on the order.

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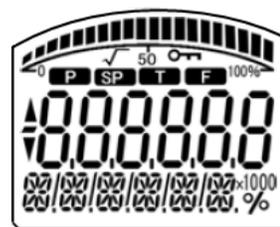
▪ BRAIN PROTOCOL

The features described in this FieldGuide are also available for EJA-E and EJX-A transmitters with BRAIN Protocol communication. Please refer to the User's Manual for details.

▪ Other

Transmitter Start-up

During start-up; the display indicates the Model of transmitter, the Communication Protocol, and the Device Revision.



All segments display to ensure the indicator is working properly. (3 seconds)

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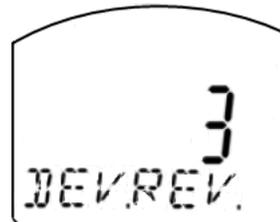
Model of Transmitter (3 seconds)

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Communication Protocol (3 seconds)

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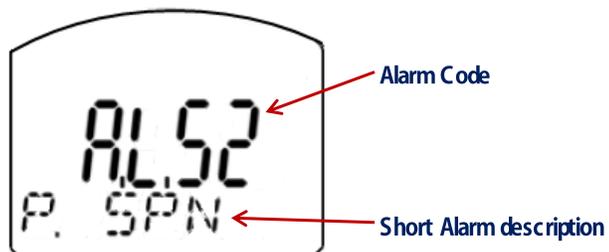
Device Revision (3 seconds)

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Figure 5: Start-up displays.

Alarms

The display is designed to give the operator various alarm codes to indicate process or hardware issues. The display has the added functionality of giving a short description of the alarm.



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Figure 6: Alarm Display.

For a complete list of alarms, please refer to the User Manual.

Note

Although FieldMate is highlighted here, any Hart Communicator has access to these functions. Refer to the User's Manual for the HART programming tree.

