

## Introduction

A unique feature of the EJX series is the Status Output option (/AL). This option provides an on/off output signal separate from the 4-20mA analog signal. The on/off output signal is driven off the user-configurable high and low alert values. The status output can be assigned as any combination of the high or low alert values of the **Input Pressure**, **Input Static Pressure**, or **Capsule Temperature**.

Uses for the Status Output:

- ✓ **Tank Level** – Eliminates a level switch or redundancy.
- ✓ **Capsule Temperature** – Remote location health monitoring (adjacent equipment, heat tracing, or process runaway).
- ✓ **Static Pressure** – Monitor pumps, valves, or tank blankets.
- ✓ **Flow Limits** – Alarm at low or high flow conditions.
- ✓ **Diagnostics** – Monitor other process conditions without the need and expense of additional devices.

The status output employs a 5% (5°C for temperature) Buffer value to avoid output chattering.

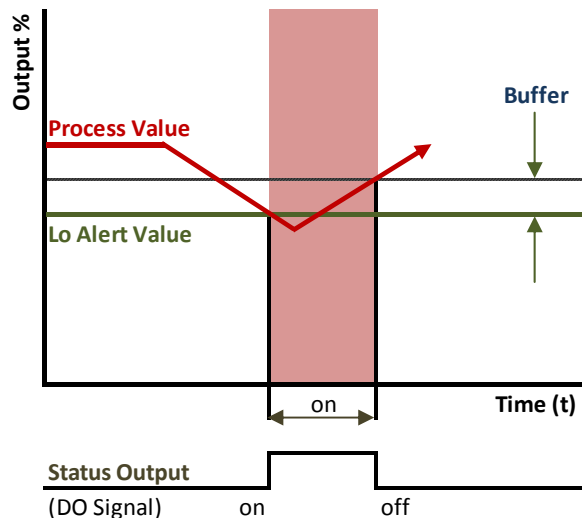
This *FieldGuide* will cover:

- Section 1** Specifications
- Section 2** Sample Wiring
- Section 3** Programming
- Section 4** Example Application

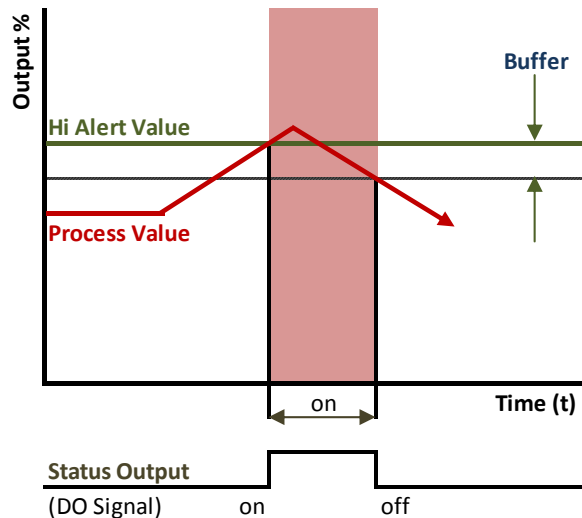


LH122910.a

## Status Output for Low Alert Value



## Status Output for High Alert Value



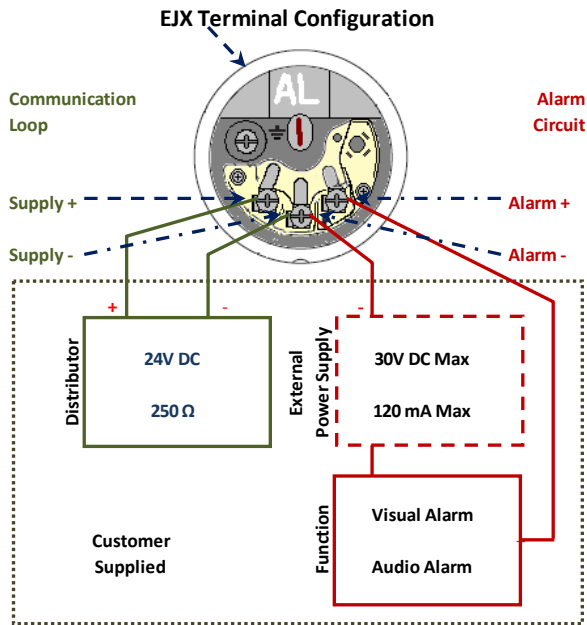
FGP501a.001a

## Section 1 Specifications

**Output Type:** Transistor output (sink type)  
**Contact Rating:** 10.5 to 30.0 VDC  
 120 mA DC (Max)

The /AL option is turned “off” when the unit is shipped from the factory.

## Section 2 Sample Wiring



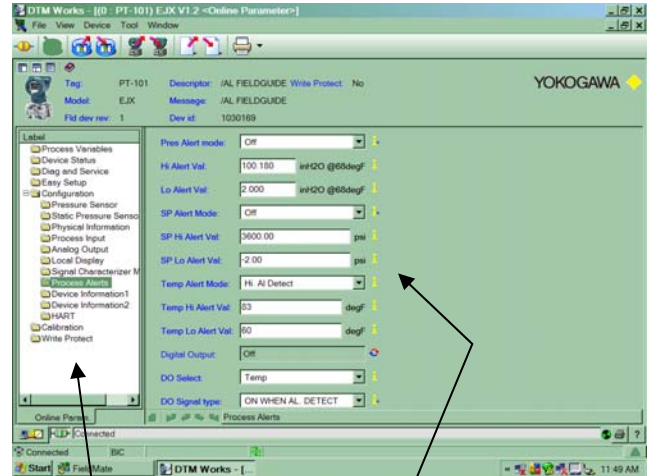
Use two-wire separately shielded cables. If shielded cable is not used, communication is not possible.

FGP501a-002a

This is a box illustration of a local audio / visual alarm. The *General Specification* of the EJX110A (GS 01C25B01-01E) also has a simple wiring diagram of the contact output driving a magnetic valve. These are just two of the different ways the /AL output contact can be used.

## Section 3 Programming

Setting up the programming for the /AL option is simple using DTM works in Fieldmate.



Label	Pres Alert Mode	OFF	PV
Process Variables	Hi. Al Detect		
Device Status	Lo. Al Detect		
Diag and Service	Hi/Lo. Al Detect		SP
Easy Setup			
Configuration	Hi Alert Val.	# Value	Capsule Temp
Pressure Sensor	Lo Alert Val.	# Value	
Static Pressure	SP Alert Mode	OFF	DO Signal
Physical Inform	Hi. Al Detect		
Process Input	Lo. Al Detect		DO Signal
Analog Output	Hi/Lo. Al Detect		
Local Display	SP Hi Alert Val.	# Value	DO Signal
Signal Character	SP Lo Alert Val.	# Value	
Device Informat	Temp Alert Mode	OFF	DO Signal
Device Informat	Hi. Al Detect		
HART	Lo. Al Detect		DO Signal
Calibration	Hi/Lo. Al Detect		
Write Protect	Temp Hi Alert Val.	# Value	DO Signal
	Temp Lo Alert Val.	# Value	
	Digital Output	On	DO Signal
	DO Select	Off	
		Pres	DO Signal
		SP	
		Temp	DO Signal
		Pres/SP	
		Pres/Temp	DO Signal
		SP/Temp	
		Pres/SP/Temp	DO Signal
	DO Signal type	ON WHEN AL DETECT	
		OFF WHEN AL DETECT	DO Signal

Read Only UM Unit of Measure

Drop Down Menu

### Set Alert Mode

(Pres Alert mode; SP Alert mode; Temp Alert mode)

These drop down menus set what condition the transmitter will trigger a process alarm.

Turns OFF monitoring of this variable → OFF

Generates Process Alert for measured values greater than the Hi Alert Value → Hi. Al Detect

Generates Process Alert for measured values Lower than the Lo Alert Value → Lo. Al Detect

Generates Process Alert for measured values greater than the Hi Alert Value AND values Lower than the Lo Alert Value → Hi/Lo. Al Detect

FGP102a.005a

### Set Alert Values

(Hi Alert Val; Lo Alert Val; SP Hi Alert Val; SP Lo Alert Val; Temp Hi Alert Val; Temp Lo Alert Val)

These fields set the actual values at which the transmitter signals a process alert. The Unit of Measure (UM) for these values is the same as was set-up for the monitoring of the variable.

### Set DO Signal

(Digital Output; DO Select; DO Signal Type)

These drop down menus control how the DO (/AL option) will operate in relation to the Process Alarms.

### DO Output

Read Only. States the current status of the DO Output. (On / Off) → On

FGP102a.007a

### DO Select

Turns OFF DO Signal monitoring of the process alerts → Off

Sets which process variable or combination of process variables the DO Signal will monitor. → Pres, SP, Temp, Pres/SP, Pres/Temp, SP/Temp, Pres/SP/Temp

FGP102a.006a

### DO Signal Type

Sets DO Signal to turn ON when a process alert is detected. → ON WHEN AL DETECT

Sets DO Signal to turn Off when a process alert is detected. (When no process alerts are detected, the DO Signal is ON). → OFF WHEN AL DETECT

FGP102a.008a

## Section 4 Example Application

### Heat Trace Health Monitoring

Using the DO Signal (/AL option) is an easy and inexpensive way to monitor the health of a Heat Trace.

A Heat Trace is used to maintain a certain temperature range of a process media. Since the process media enters into the transmitter at this constant temperature range, the capsule temperature can be used to monitor this range.

While monitoring, if the capsule temperature goes below the lower range threshold, the Heat Trace has failed. If the capsule temperature goes over the upper range threshold, the Heat Trace is not working properly.

The Process Alerts and the DO signal can be set to provide warnings of these events.

For this example, the Heat Trace is maintaining the process media within the range of 80°F to 130°F.

The Process Alerts and the DO Signal are going to be setup to monitor the Capsule Temperature .

The DO Signal is going to drive a local visual alarm.

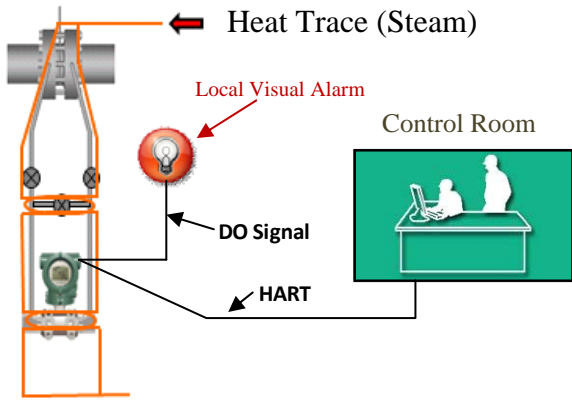
Using DTM Works in Fieldmate:



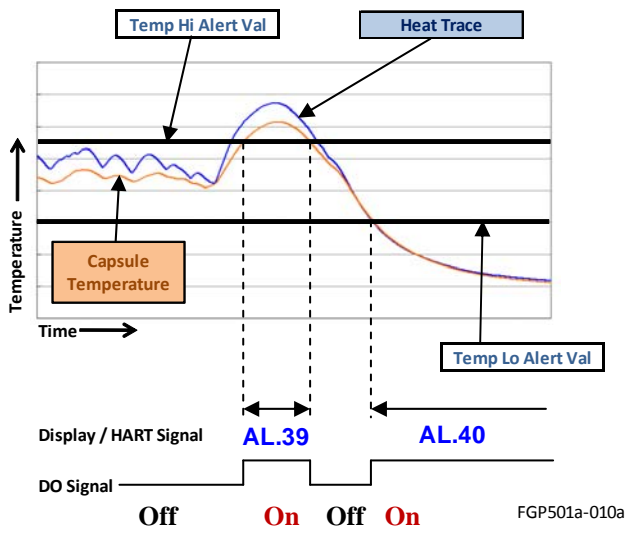
FGP102a-009a

The above graphic illustrates the setting programmed into the transmitter. It is set to detect a Process Alarm for both Hi and Low Temperature process measurements. The DO Signal is set to go to the “On” position when that Process Alarm is activated. This will set off the local visual alarm.

LH122910.a



FGP501a-011a



FGP501a-010a

### Alert Codes (Display / HART)

<b>AL.39</b>	CT high alarm	Detected Temperature exceeds specified threshold
<b>TMP.HI</b>		
<b>AL.40</b>	CT low alarm	threshold
<b>TMP.LO</b>		

FGP501a-012a

Refer to the HART IM for a complete list of Alert Codes.

**YOKOGAWA**   
 Yokogawa Corporation of America  
 2 Dart Road  
 Newnan, GA 30265