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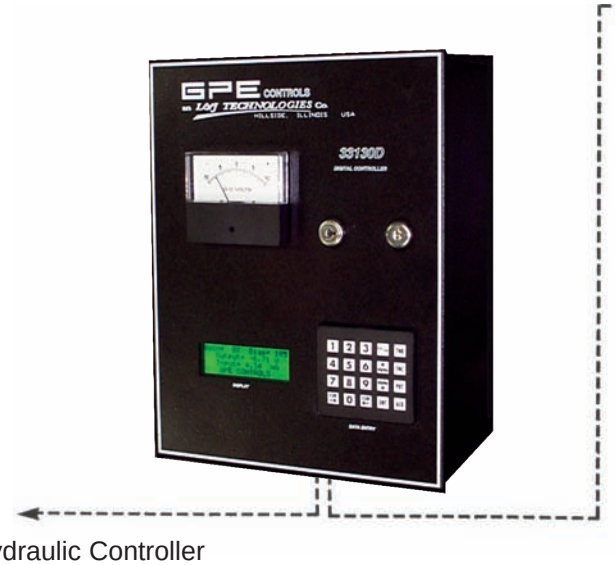
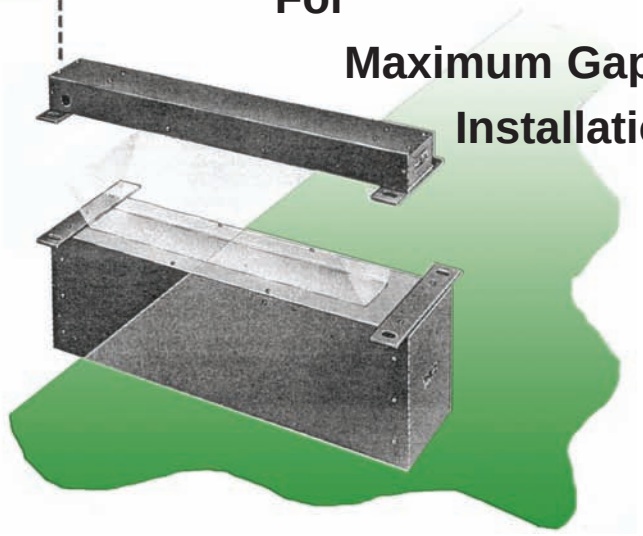
PRODUCT DATA SHEET

Autowide™ Centerguide Sensor

GPE 31581



For Maximum Gap Installations



Description

The Model 31581 Autowide Centerguide Sensor is designed specifically to provide continuous scanning of the entire span of strip width variations. This eliminates operator adjustments for strip width changes. The sensor consists of two light source housings and two solar cell housings. 250 watt lamps are used as the light source and the number of lamps required is determined by the detector length.

The silicone solar cell is a photovoltaic strip, which generates a voltage (or current) proportional to the amount of light falling on it. Extremely versatile, this sensor can be mounted up to 48 inches apart, providing greater installation flexibility.

The Model 33130D Digital Controller is required for sensor operation. It is designed to accept input signals required. Strip position errors are detected in the tuned circuit and rectified and as a result to controller DC output is proportional to the error signal. Model 33130D can provide control modes, such as, Proportional Speed Floating (PSF) or Predictive Position Feedback (PPF). Output signals are intended for use with GPE's electrohydraulic controller.

- **Completely Automatic**
  Sensor scans the entire span of strip width variations, eliminating operator adjustments for width changes.
- **Simple Calibration**
  No Sensor adjustments necessary. Requires only gain and bias adjustments at controller with no interaction.
- **Reliable Operation**
  Photocell and lamps operate at low voltage for increased life. Solid state electronics throughout controller.
- **Rugged Construction**
  Solar cells and infrared lamps are enclosed in easily accessible heavy gauge steel.
- **Highly Flexible**
  Lamp and detector housings can be mounted up to 48 inches apart for greater installation flexibility.

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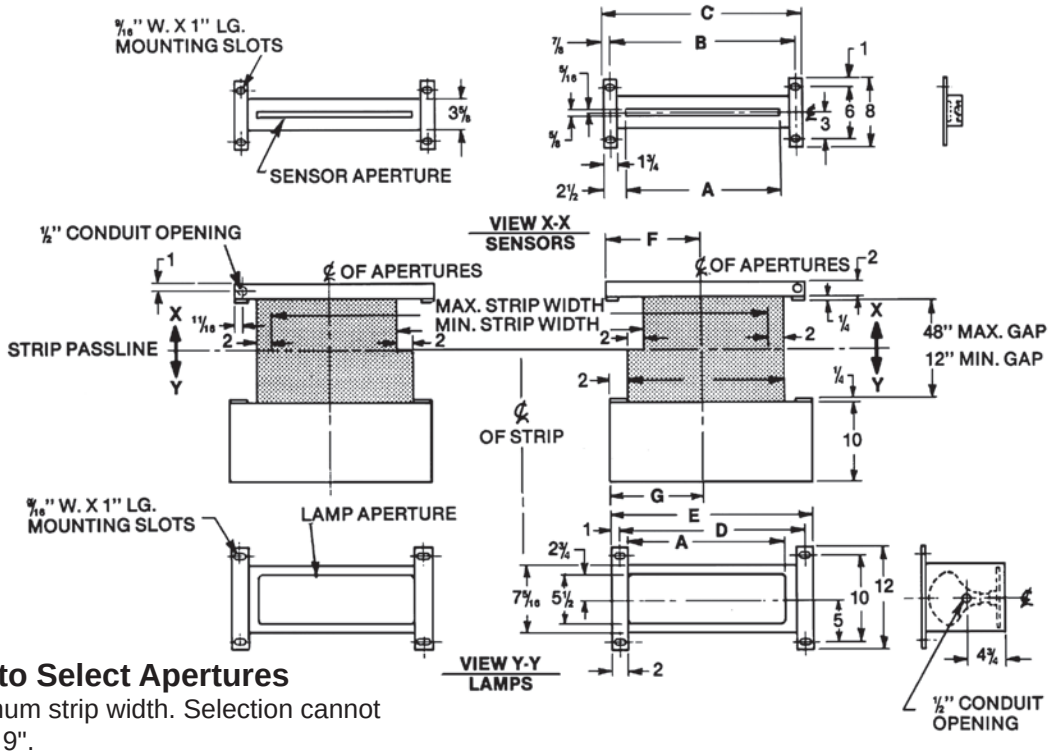
Outline Dimensions



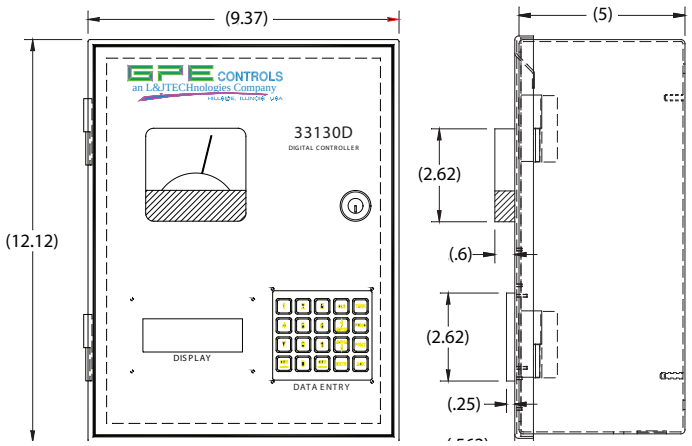
How to Select Apertures

1. Select minimum strip width. Selection cannot be less than 9".
2. *To obtain maximum strip width for chosen aperture:* Maximum strip width = Minimum strip width + H (see chart). Example: using Model 31581-05 with a selected minimum strip width of 20", the maximum strip which can be used is 20" + 28" = 48".
3. Strip passline should be as close to sensor as possible.
4. Apertures (***A***) must lie directly over each other.

Sensor Model	Aperture	Sensor		Lamp Housing				
	A	***B***	***C***	***D***	***E***	***F***	***G***	***H***
31581-05	18	21 ¼	23	22	24	11½	11	28
31581-06	24	27 ¼	29	28	30	14½	14	40
31581-07	30	33 ¼	35	34	36	17½	17	52
31581-08	36	39 ¼	41	40	42	20½	20	64

How to Order

1. **Model 31581 Autowide Centerguide Sensor** (Includes two lamp housings and two detector housings).
2. **Sensor Length** (See above, "How to Select Apertures").
3. **Sensor Gap**
4. **Model 33130D Digital Controller** (Controller must be ordered with sensor).
5. **Accessories as required:**
   a) Lamp Failure Alarm
   b) Strip Deviation Indicator
   c) Roll Position Indicator
   d) Position Transmitter
   e) Remote Bias Potentiometer
   f) Manual / Automatic Switches



Model 33130D Digital Controller

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Autowide™ Centerguide Sensor

GPE 31581

Operation and General Specifications

The photovoltaic cell generates a voltage in proportion to the exposure of light from the sensor lamps. Each sensor independently detects an edge of the strip and delivers a signal proportional to edge position to an input summarizer network. Both input signals are compared, and the resultant error signal is fed into a solid state electronic controller. The controller output is applied to the moving coil of the electrohydraulic controller, which converts the controller signal into a proportional hydraulic signal for moving the strip shifting mechanism to correct the strip deviation. When the strip is centered, the error, signal is zero (equal voltage in both sensors) and no current flows through the coil, which balances the jet pipe in the electrohydraulic controller. If the strip varies from the mean centerline (unequal voltage between sensors) current flows through the moving coil and deflects the jet pipe which in turn moves the cylinder to provide the corrective motion to the strip.

Model 31581 Sensor

Input Power

117VAC ± 10%, 50/60 Hz

Output Variable

DC voltage signal to Model 33130

Controller Centerline Shift

Less than ± 1/8" per 6 inches of width change

Detection Sensitivity

12" gap ... 100 mv/in

48" gap. .. 20 mv/lin

Physical Characteristics

Sensor Length	Power Required Lamps	No.of Lamps
18"	675 VA	3
24"	900 VA	4
30"	1125 VA	5
36"	1350 VA	6

Model 33130D Digital Controller

Input Power: 110 VAC ± 10%, 50/60 Hz@1Amp (220 VAC optional)

Input Signal: Variable resistance from photoelectric edge or line guide sensors.

Output Signals:

A. *Proportional-Speed Floating (PSF) or Predictive Position Feedback (PPF)* To Moving Coil Controller: Nominal ± 10 VDC into 250* ohms (min.)

*Recommended Moving Coils:

1. Encapsulated Coil
   Part RB-778-33-11 (320 ohm).
2. Impregnated Coil
   Part RB-776-89-11 (380 ohm).

B. *Regulated Power to Sensor Models:*
31530-01, 31551-X1.....12 VDC, 1 Amp

C. *For Manual Operation:*
To Moving Coil Controller:
Programmable - 5, 0, + 5 VDC or
12 VDC, 150 ohm min. External Supply

Ambient Temperature: 32ºF to 120ºF, 10-95% RH

Indicator Output: ±10VDC Analog + Digital Reading.

Frequency Response: PSF Output 0-200Hz (3db down)
PPF Output 0-40Hz (3db down)

Options: Control Relays
Discrete Inputs
Remote Communication - RS232 or RS485

Construction: Steel, Gasketed enclosure with hinged door, black enamel finish.

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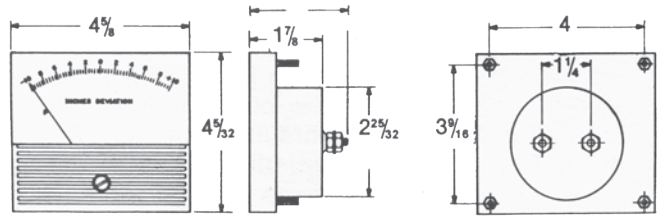
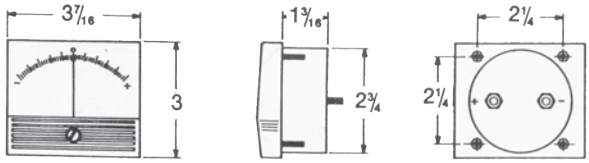
Accessories — Dimension Drawings



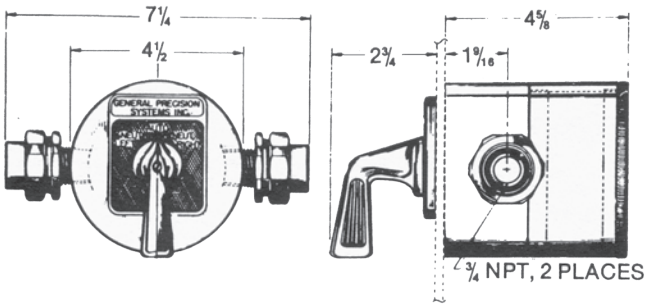
Strip Deviation Indicator

10-0-10 inch scale. Typical accuracy to 5% full scale.



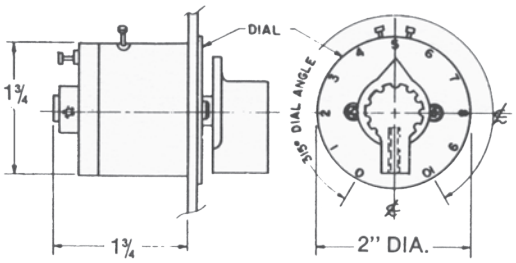
Roll Position Indicator

Scale dimensionless. Accuracy ± 2% full scale.



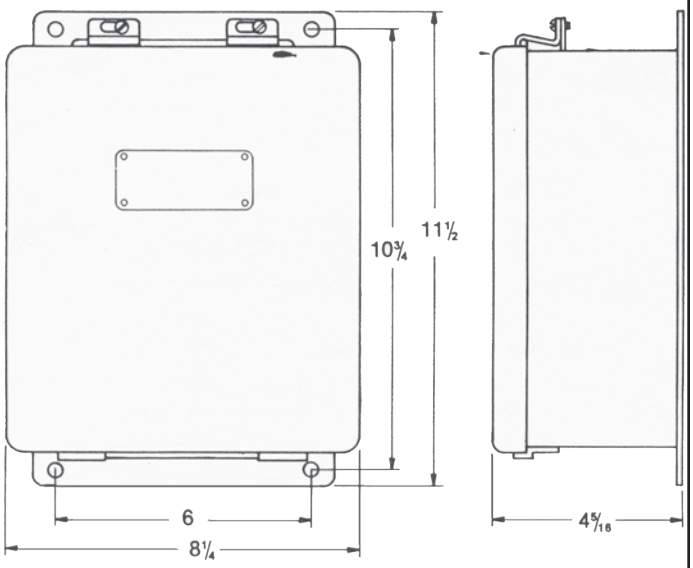
Manual / Automatic Switches

Connects to moving coil for automatic signal
or to left-right manual operation



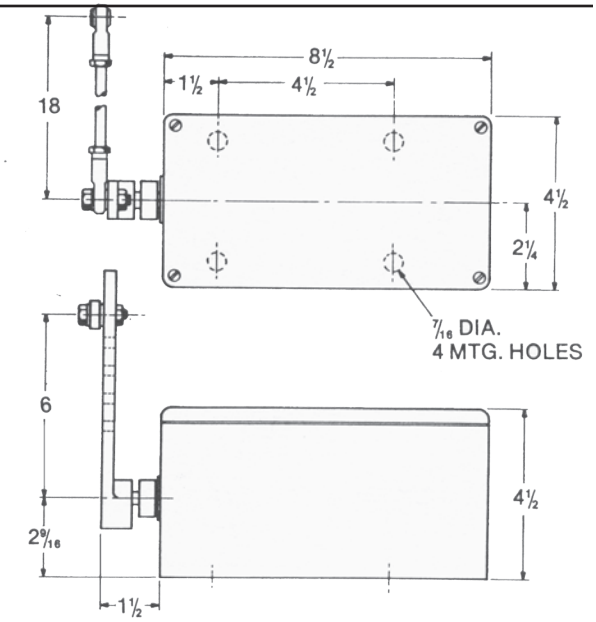
Remote Bias Potentiometer

2000 ohms 5%,1% linearity, 5 watts, 1 turn, 0-10 scale.



Lamp Failure Alarm

Provides contact for alarm indicating lamp burnout
or power failure.



Position Transmitter

2000 ohms, 5% linearity, 2.1 watts 1 turn 360°.

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