ECA101 Basic Sensor

Lower cost sensor for repeatable measurements

Performance

- Nonlinearity: Nonlinear sensor, see chart below
- Resolution: 0.02% RMS[1] @ 10 kHz
- Bandwidth: 10 kHz

Features

Easy Operation:

- Adjustable Gain and Offset (Zero)
- Range Indicating LEDs
- Adjustable Setpoint
- 12-24 VDC Power
- 0-10 VDC Analog Output
- Setpoint Switch Contacts

Export Limitations

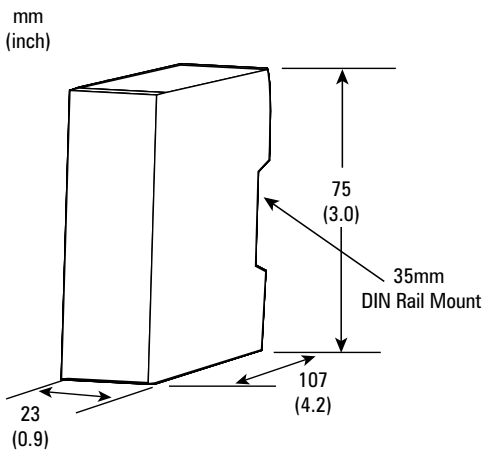
Because of high resolutions, export of the ECA101 to some countries requires an export license.

Function Descriptions

Gain: Adjusts the sensitivity (output voltage change per unit of target position change)
Offset (Zero): Shifts output DC level
Setpoint (Switch): Adjusts analog output voltage at which setpoint switch closure occurs

Specifications

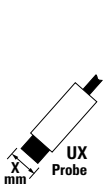
Analog Output		0-10 VDC, 0 Ω, 15 mA max
Probe Thermal Drift at Mid-Range		0.2%/°C
Setpoint Switched Output	Maximum Voltage	30 VAC/60 VDC
	Maximum Current	100 mA
	ON resistance	30-50 Ω
	OFF Leakage	1 µA
	Hysteresis	0.1 V
	Response Time	0.25 mS On; 0.05 mS Off
Input Power		12-24 VDC, 2 W
Driver Operating Environment		4°C to 50°C, IP40

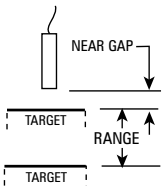


[1]Peak-to-Peak resolution is approximately 8-10 time RMS resolution. In high EMI environments (10 V/m), output noise levels could rise to 600 mV RMS (6% resolution)

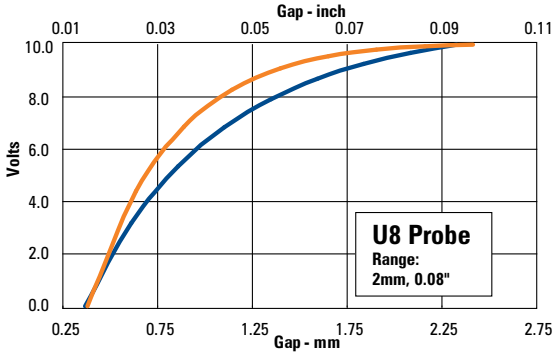
Ranges and Linearity

Specifications based on standard 3 m cable, target size 3 times probe diameter, and 6061 aluminum or 4140 steel targets.





Probe Model	Range mm inch	Near Gap mm inch
U3	0.50 0.020	0.05 0.002
U5	1.25 0.050	0.25 0.010
U8	2.00 0.080	0.35 0.015
U12	3.50 0.140	0.60 0.025
U18	5.00 0.200	0.75 0.030
U25	8.00 0.320	1.25 0.050
U38	12.5 0.500	1.50 0.060
U50	15.0 0.600	2.00 0.080



Typical output linearity (U8 example)

6061 Aluminum

4140 Steel