

# ECL203 Eddy-Current Sensor

FPGA-based sensor uses digital signal processing to extract higher performance from eddy-current technology. Easy to setup, easy to use sensor for position/displacement measurements in clean or dirty environments.

The ECL203 is a lower resolution version of the ECL202. The ECL203 is classified as EAR99 and does not require an export license.



## Performance

- Nonlinearity:  $\pm 0.2\%$
- Resolution: Probe/Range dependent, see back
- Bandwidth: 15 kHz
- 0-10 VDC Output
- 15-28 VDC Power

## Features:

### Easy Operation:

- Pushbutton Offset
- Pushbutton Setpoint
- Range Indicating LEDs

### Programmability:

- Remote Offset Activation
- Remote Setpoint Activation
- Plug&Play Sensor (TEDS) for use with LabVIEW™

### Mounting

- 35 mm DIN Rail, H-100 mm (3.9"), W-23 mm (0.9"), D-112 mm (4.4")



## Function Descriptions

- Pushbutton Offset** Shifts the DC level of the output voltage to the center of the voltage range (i.e. 5 V for a 0-10 V output) to establish repeatable reference point. The button only functions when the probe is in the center 20% of its calibrated range.
- Pushbutton Setpoint** Sets the setpoint voltage at which a contact closure output activates.

## Accessories

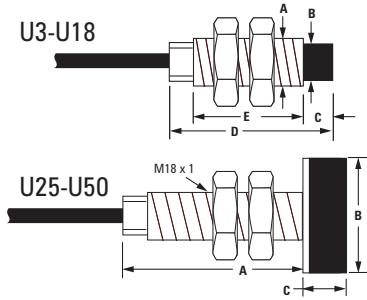
- Power Supply** DIN Rail mount 15 VDC switching power supply



# PROBES

3 meter cables standard, custom lengths available

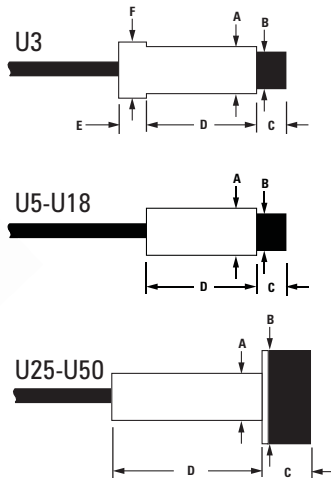
## B



Threaded, stainless steel body for threaded or thru-hole mounting.

mm / inch	A	B	C	D	E	Wrench
<b>U3B</b>	M3x.5	2.0 / 0.08	3.0 / 0.12	21.1 / 0.83	13.0 / 0.51	5.5 / 0.22
<b>U5B</b>	M5x.8	3.4 / 0.13	3.0 / 0.12	25.0 / 0.99	18.0 / 0.71	8.0 / 0.31
<b>U8B</b>	M8x1	6.2 / 0.24	5.0 / 0.20	27.0 / 1.07	18.0 / 0.71	13.0 / 0.51
<b>U12B</b>	M12x1	10.0 / 0.39	7.0 / 0.28	29.0 / 1.15	18.0 / 0.71	17.0 / 0.67
<b>U18B</b>	M18x1	15.8 / 0.62	9.0 / 0.36	31.0 / 1.22	18.0 / 0.71	24.0 / 0.94
<b>U25B</b>	46.0 / 1.81	25.0 / 0.99	15.0 / 0.59			24.0 / 0.94
<b>U38B</b>	60.0 / 2.36	38.0 / 1.50	20.0 / 0.79			24.0 / 0.94
<b>U50B</b>	73.0 / 2.87	50.0 / 1.97	25.0 / 0.99			24.0 / 0.94

## C



Smooth, stainless steel body for clamp or set-screw mounting.

mm / inch	A	B	C	D	E	F
<b>U3C</b>	2.92 / 0.115	2.0 / 0.08	3.0 / 0.12	13.0 / 0.51	5.0 / 0.20	3.6 / 0.14
<b>U5C</b>	4.90 / 0.193	3.4 / 0.13	3.0 / 0.12	18.0 / 0.71		
<b>U8C</b>	7.90 / 0.311	6.2 / 0.24	5.0 / 0.20	18.0 / 0.71		
<b>U12C</b>	11.89 / 0.468	10.0 / 0.39	7.0 / 0.28	18.0 / 0.71		
<b>U18C</b>	17.91 / 0.705	15.8 / 0.62	9.0 / 0.36	18.0 / 0.71		
<b>U25C</b>	17.91 / 0.705	25 / 0.99	15.0 / 0.59	46.0 / 1.81		
<b>U38C</b>	17.91 / 0.705	38 / 1.50	20.0 / 0.79	60.0 / 2.36		
<b>U50C</b>	17.91 / 0.705	50 / 1.97	25.0 / 0.99	73.0 / 2.87		

## Specifications

### Range, Resolution, Temperature Coefficient

Final specifications are material dependent.

Standard probe operating temperature range: -25°C to +125°C, IP67; High temperature probe operating temperature range: -25°C to +200°C, IP63

Driver operating temperature range: 15°C to 50°C, IP40

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Probe Model	Range mm / inch	Near Gap mm / inch	RMS Resolution <sup>1</sup> nm / $\mu$ inch		Temperature Coefficient <sup>2</sup> %F.S./°C			
			Nonferrous	Ferrous	Nonferrous		Ferrous	
					Probe	Driver	Probe	Driver
<b>U3</b>	0.50 / 0.020	0.05 / 0.002	300 / 12.0	300 / 12.0	±0.04	±0.04	±0.04 <sup>3</sup> ±0.08	±0.08
<b>U5</b>	1.25 / 0.050	0.25 / 0.010	300 / 12.0	300 / 12.0	±0.04	±0.1	±0.1	±0.1
<b>U8</b>	2.00 / 0.080	0.35 / 0.015	300 / 12.0	300 / 12.0	±0.01	±0.04	±0.04	±0.04
<b>U12</b>	3.50 / 0.140	0.60 / 0.025	300 / 12.0	390 / 12.0	±0.02	±0.04	±0.03	±0.04
<b>U18</b>	5.00 / 0.200	0.75 / 0.030	340 / 13.4	450 / 17.7	±0.01	±0.04	±0.01	±0.04
<b>U25</b>	8.00 / 0.320	1.25 / 0.050	650 / 25.6	750 / 29.5	±0.01	±0.04	±0.01	±0.04
<b>U38</b>	12.5 / 0.500	1.50 / 0.060	1200 / 47.2	1300 / 51.2	±0.01	±0.04	±0.02	±0.04
<b>U50</b>	15.0 / 0.600	2.00 / 0.080	1400 / 55.1	1500 / 59.1	±0.01	±0.04	±0.01	±0.04

<sup>1</sup>Peak-to-Peak resolution approximately 10 X RMS Resolution; in high EMI environments (10 V/m), output noise levels could rise to 20 mV RMS (0.2% resolution)

<sup>2</sup>Temperature coefficient specified at: Probe: 15°C - 65°C; Driver: 15°C - 50°C except where noted

<sup>3</sup>Specified at limited temperature range for maximum performance, 15°C - 35°C

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