

E52Q Cube and E56 Pancake inductive sensors



The high-performance E52Q Cube and E56 Pancake inductive proximity sensors provide a solution to your long-range metal-sensing applications. These new sensor styles come in industry-standard package sizes, are designed as drop-in replacements to competitive offerings, and offer unique convenience features that make installation and replacement easier than ever.



Powering Business Worldwide

Target applications

- Amusement parks
- Automotive manufacturing
- Heavy-duty trucks, cranes and machinery
- Pipe and rod manufacturing
- Steel mills
- Metalworking
- Machinery OEMs
- Block and brick manufacturing equipment
- Aggregate machinery

Features

- Sensing ranges up to 40 mm for cube styles and 100 mm for pancake styles
- Heavy-duty construction and temperature ratings down to -40°C to handle the harshest sensing environments
- Auto-configure output technology auto-detects NPN (sinking) or PNP (sourcing) and switches the sensor automatically, simplifying installation and maintenance
- Dual and complementary outputs are standard on all DC models, allowing you to reduce inventory while still providing a wide range of sensing solutions
- Bright dual power and output status LEDs for communicating sensor status to operators
- Micro- or mini-connector options available
- Industry-standard package size and mounting hole locations

Ease of installation

A key feature of both the cube and pancake products is the auto-configuration technology included on DC voltage models. This technology, first introduced in Eaton's technologically innovative iProx® tubular sensor, uses an embedded microprocessor to automatically detect if the sensor has been wired for NPN (sinking) or PNP (sourcing) and switches the sensor into that mode without user intervention.

This feature, combined with complementary outputs (1NO/1NC) found on both products, means users can replace four different sensor models with just one E52Q Cube or E56 Pancake. Not only does this dramatically simplify installation—no more hassling with wiring diagrams and installation manuals—but it also allows customers to reduce their inventory while being able to solve a wider array of sensing challenges.

Outstanding sensing range

The E52Q Cube and E56 Pancake families feature the longest sensing ranges Eaton has ever engineered into inductive sensors. The cube-style sensor offers detection ranges from 20 to 40 millimeters and a five-way adjustable sensing head. The pancake-style sensor offers detection ranges from 50 to 100 millimeters and is available in three different package sizes: 79-, 110- and 172-millimeter diameters. If your application calls for a specific sensing range or unique connector, Eaton's sensor application engineers can quickly customize an E52Q Cube or E56 Pancake sensor to meet your exact specifications.

Eaton quality and support

The quality, reliability and performance you've come to expect from Eaton is evident in the design of these sensors. The models are CE approved and are backed by Eaton's world-class sensor application engineers and customer service team, on call five days a week to provide assistance with specifying, installation, troubleshooting and servicing of Eaton's sensor products. Reach them directly by calling 1-800-426-9184, ext. 1.

Approvals

- CE
- RoHS

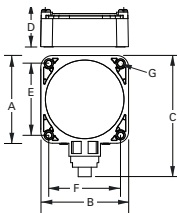
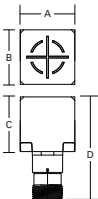
DC 4-Wire

	E56 Pancake			E52Q Cube
	Small Diameter	Medium Diameter	Large Diameter	
Operating voltage	10–42 Vdc	10–42 Vdc	10–42 Vdc	10–48 Vdc
Load current (max.)	300 mA	300 mA	300 mA	300 mA
Burden current	< 25 mA	< 25 mA	< 25 mA	< 25 mA
Off-state leakage	< 150 µA per output	< 150 µA per output	< 150 µA per output	< 150 µA per output
Voltage drop	< 2.5V	< 2.5V	< 2.5V	< 2.5V
Outputs	1NO/1NC (complementary)	1NO/1NC (complementary)	1NO/1NC (complementary)	1NO/1NC (complementary)
Standard target size (mild steel)	150 mm	210 mm	300 mm	120 mm
Frequency of operation	70 Hz	40 Hz	30 Hz	100 Hz
Repeatability	< 3%	< 3%	< 3%	< 3%
Hysteresis (max.)	10–15%	10–15%	10–15%	10–15%
Time delay before availability	300 mS	300 mS	300 mS	300 mS
Circuit protection	Short-circuit protection with auto-reset	Short-circuit protection with auto-reset	Short-circuit protection with auto-reset	Short-circuit protection with auto-reset
Operating temperature ❶	–25° to +70°C (–13° to +158°F) ❷	–25° to +70°C (–13° to +158°F) ❷	–25° to +70°C (–13° to +158°F) ❷	–25° to +158°F (–25° to +70°C)
Temperature drift	±10%	±10%	±10%	±10%
Enclosure rating	Type 4, 4X, 6, 6P, 12 and 13 (IP67)	Type 4, 4X, 6, 6P, 12 and 13 (IP67)	Type 4, 4X, 6, 6P, 12 and 13 (IP67)	Type 4, 4X, 6, 6P, 12 and 13 (IP67, IP68)
Approvals	CE	CE	CE	CE
Indicator LEDs	Power = Green; Output = Red	Power = Green; Output = Red	Power = Green; Output = Red	Power = Green; Output = Red
Materials of construction	PPS housing Aluminum baseplate on medium and large models	PPS housing Aluminum baseplate on medium and large models	PPS housing Aluminum baseplate on medium and large models	Zinc alloy housing, PPS, PC
Sensing range (max.)	50 mm	70 mm	100 mm	—
Range adjustment	Not adjustable	Potentiometer adjustable down to 50% of rated maximum range	—	—

❶ Will operate at –40°C, but range drift will occur.

❷ Small diameter DC unshielded models are rated at –40°C. All other models can be operated at –40°C, but range drift will occur.

Dimensions

Mounting								
Model	A (Depth)	B (Width)	C (Depth)	D (Height)	E	F	G (Dia.)	
Pancake								
Small Diameter							Pancake Model 	
Micro connector	3.13 (79.0)	3.13 (79.0)	4.32 (110.0)	1.54 (39.0)	2.56 (65.0)	2.56 (65.0)		0.21 (5.0)
Mini connector			4.67 (119.0)					
Screw terminal			3.87 (92.0)					
Medium Diameter							Cube Model 	
Micro connector	4.35 (110.0)	4.35 (110.0)	4.94 (125.4)	1.63 (41.0)	3.625 (92.0)	3.625 (92.0)		0.218 (5.5)
Mini connector			5.29 (134.4)					
Large Diameter								
Micro connector	6.75 (171.5)	6.75 (171.5)	7.26 (184.4)	2.66 (67.5)	5.875 (149.0)	5.875 (149.0)		0.266 (7.0)
Mini connector			7.61 (193.3)					
Cube								
Micro connector	1.57 (40.0)	1.57 (40.0)	1.57 (40.0)	2.725 (69.2)				
Mini connector	1.57 (40.0)	1.57 (40.0)	1.57 (40.0)	2.965 (75.3)				

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