

E52 Cube Style Sensors

3



E52 Cube Style Sensors

Product Description

The E52 Cube Sensor from Eaton's Electrical Sector is a high performance inductive proximity sensor, providing long sensing ranges in a compact, industry-standard package.

The E52 Cube family features Eaton's Autoconfigure output technology, which automatically detects NPN or PNP wiring states and switches the sensor accordingly, without user intervention. The E52 also utilizes complementary outputs to further reduce the number of models needed to cover a wide array of inductive sensing applications. Individual power and output LEDs make installation and troubleshooting easy. Combine the above features with the range and five-way mounting flexibility of the E52 Cube family, and chances are there's an E52 solution to your sensing needs.

The E52 Cube was designed with the most heavy-duty applications in mind. Some of those applications include automotive manufacturing, aggregate machinery, and metalworking applications. Try the E52 Cube in some of your most demanding applications today.

Application Description

Typical Applications

- Automotive manufacturing
- Metalworking
- Machinery OEMs
- Pipe and rod manufacturing
- Block and brick manufacturing equipment
- Amusement parks
- Heavy-duty trucks, cranes and lifts

Contents

Description

Page

E52 Cube Style Sensors

Product Selection

E52 Cube Style Sensors **V8-T3-75**

Compatible Connector Cables **V8-T3-75**

Technical Data and Specifications **V8-T3-76**

Wiring Diagrams **V8-T3-76**

Dimensions **V8-T3-77**

Features

- Long inductive proximity ranges available (up to 40 mm sensing distance)
- Four-wire DC models have complementary outputs (1NO-1NC)
- Four-wire DC models use auto-configure technology, which allows the sensor to automatically adapt for NPN or PNP without user intervention
- Robust design featuring vibration and impact-absorbing potting compound
- Ideal for extreme temperatures or high pressure washdown environments

Standards and Certifications

- CE


DANGER

THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safety-related use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.



For the most current information on this product, visit our Web site: www.eaton.com

For Customer Service in the U.S. call 1-877-ETN CARE (386-2273), in Canada call 1-800-268-3578.
For Application Assistance in the U.S. and Canada call 1-800-426-9184.

Product Selection





E52 Cube Style Sensors

DC Four-Wire Sensors

	Voltage Type	Output Configuration	Shielding	Output Type	Sensing Range	Connector Style	Catalog Number
	Cube Package (40 x 40 x 40 mm)						
	10–48 Vdc	NPN/PNP autoconfigure ①	Shielded	1 NO and 1 NC	15 mm	DC 4-pin micro	E52Q-DL15SAD01 ⓘ
						DC 4-pin mini	E52Q-DL15SAE01 ⓘ
			Unshielded	1 NO and 1 NC	15 mm	DC 4-pin micro	E52Q-DL15UAD01 ⓘ
						DC 4-pin mini	E52Q-DL15UAE01 ⓘ
	10–48 Vdc	NPN/PNP autoconfigure ①	Shielded	1 NO and 1 NC	20 mm	DC 4-pin micro	E52Q-DL20SAD01 ⓘ
						DC 4-pin mini	E52Q-DL20SAE01 ⓘ
			Unshielded	1 NO and 1 NC	20 mm	DC 4-pin micro	E52Q-DL20UAD01 ⓘ
						DC 4-pin mini	E52Q-DL20UAE01 ⓘ
			25 mm	DC 4-pin micro	E52Q-DL25UAD01 ⓘ		
				DC 4-pin mini	E52Q-DL25UAE01 ⓘ		
	30 mm	DC 4-pin micro	E52Q-DL30UAD01 ⓘ				
		DC 4-pin mini	E52Q-DL30UAE01 ⓘ				
		35 mm	DC 4-pin micro	E52Q-DL35UAD01 ⓘ			
			DC 4-pin mini	E52Q-DL35UAE01 ⓘ			
		40 mm	DC 4-pin micro	E52Q-DL40UAD01 ⓘ			
			DC 4-pin mini	E52Q-DL40UAE01 ⓘ			

Compatible Connector Cables

Standard Cables ^②

	Current Rating at 600V	Voltage Style	Number of Pins	Gauge	Length	Pin Configuration/Wire Colors (Face View Female Shown)	PVC Jacket Catalog Number	PUR Jacket Catalog Number	
 Micro-Style Straight Female	Micro-Style, Straight Female								
	—	DC	4-pin, 4-wire	22 AWG	6.0 ft (2m)		1-Brown	CSDS4A4CY2202	CSDS4A4RY2202
					2-White				
					3-Blue		CSDS4A4CY2205	CSDS4A4RY2205	
4-Black									
					32.8 ft (10m)		CSDS4A4CY2210	CSDS4A4RY2210	
 Mini-Style Straight Female	Mini-Style, Straight Female								
	10A	AC/DC	4-pin, 4-wire	16 AWG	6.0 ft (2m)		1-Black	CSMS4A4CY1602	—
					2-Blue				
					3-Brown		CSMS4A4CY1604	—	
4-White									
					19.7 ft (6m)		CSMS4A4CY1606	—	

Notes

Ⓢ See listing of compatible connector cables above.

^① Autoconfigure technology allows the sensor to automatically adapt to NPN or PNP without user intervention.

^② For a full selection of connector cables, see **Tab 10, section 10.1**.

Technical Data and Specifications

E52 Cube Style Sensors

Description	DC Four-Wire
Operating voltage	10–48 Vdc
Load current (maximum)	300 mA
Burden current	<25 mA
Off-state leakage	<150 μ A per output
Voltage drop	<2.5V
Outputs	1 NO/1 NC (complementary)
Standard target size (mild steel)	120 mm
Frequency of operation	100 Hz
Repeatability	<3%
Hysteresis (maximum)	10–15%
Time delay before availability	300 ms
Circuit protection	Short circuit protection with auto-reset
Operating temperature ^①	–25° to 158°F (–25° to 70°C)
Temperature drift	±10%
Enclosure rating	NEMA 4, 4X, 6, 6P, 12 and 13 (IP67, IP68)
Indicator LEDs	Green: power; Red: output status
Material of construction	Zinc alloy housing, PPS, PC

Wiring Diagrams

Pin numbers are for reference, rely on pin location when wiring.

E52 Cube Style Sensors

Voltage Type	Micro-Connector	Mini-Connector
DC four-wire	<p><i>AutoConfigure enables load to be wired to +V or (-)</i></p>	<p><i>AutoConfigure enables load to be wired to +V or (-)</i></p>

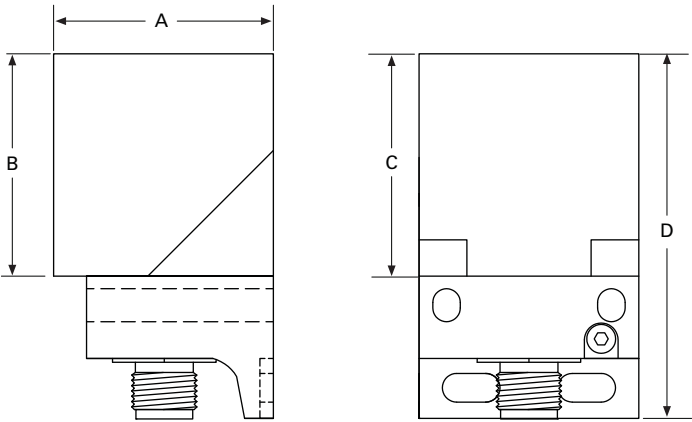
Note

^① Will operate at –40°F (–40°C), but range drift will occur.

Dimensions

Approximate Dimensions in Inches (mm)

E52 Cube Style Sensors



Model	Width A	Depth B	Height C	Overall Height D
Micro-connector	1.57 (40)	1.57 (40)	1.57 (40)	2.725 (69.2)
Mini-connector	1.57 (40)	1.57 (40)	1.57 (40)	2.965 (75.3)