

E51 Limit Switch Style, Modular Sensors



Contents

Description

Page

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Product Selection

Assembled Sensors **V8-T5-98**Sensor Heads **V8-T5-100**Sensor Bodies **V8-T5-101**Logic Module **V8-T5-102**Receptacles **V8-T5-102**Compatible Connector Cables **V8-T5-103**Accessories **V8-T5-72**Technical Data and Specifications **V8-T5-104**Excess Gain **V8-T5-104**Wiring Diagrams **V8-T5-105**Dimensions **V8-T5-106**

E51 Limit Switch Style, Modular Sensors

Product Description

E51 Limit Switch Style Modular Sensors from Eaton's Electrical Sector are available in thru-beam, reflex, polarized reflex, diffuse reflective and fiber optic sensing modes to solve a wide variety of sensing applications. Modular, plug-in components are easy to maintain, meaning less downtime and reduced inventory. Choose between two-wire sensors with AC/DC operation and four-wire sensors in either AC or DC styles. Connection options include terminal, mini-connector and various lengths of cable. Sensors can be ordered in component form or as fully assembled units.

Features

- Choose from five different sensing modes including fiber optic
- All heads feature a selector switch for light or dark operation
- Logic modules are available to provide additional control functions
- Rugged construction, ideal for industrial environments
- Viton gaskets ensure a positive seal and high chemical resistance
- Sensor heads can be rotated to any of four positions
- Components are interchangeable with E51 proximity sensors
- Sensors accommodate both U.S. and DIN mounting dimensions
- Sensor bodies feature bifurcated engagement prongs for a reliable electrical connection when plugging into receptacle stabs

Standards and Certifications

- UL Listed
- CSA Certified
- CE (where shown)

**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

Assembled Sensors

Assembled Sensor

Sensor Heads ^④

Reflex



Polarized Reflex



Diffuse Reflective



Thru-Beam Detector



Thru-Beam Source

Reflex, Diffuse Reflective and Thru-Beam Sensors

Sensor Body and Receptacle



Operating voltage
Output
Sensor body

Two-Wire Sensors

20–264 Vac/dc
NO or NC ^①
E51SAL

Four-Wire Sensors

120 Vac
NO and NC complementary
E51SCL
E51SCN
Accepts logic module ^②
E51RCB

10–30 Vdc
NO and NC complementary
E51SNL
NPN
E51SPL
PNP
E51RN

Receptacle ^③**E51RA****E51RC****E51RCB****E51RN****E51RN**

Sensing Range

Response Time

Sensing Beam

Sensor Head Only Catalog Number

Assembled Sensors with Head, Sensor Body and Receptacle Catalog Number

Reflex

18 ft (5.5m)	Standard response	Infrared	E51DP1	E51ALP1	⊗ ⊗	E51CLP1	E51CNP1	E51NLP1	⊗ ⊗	E51PLP1	⊗ ⊗
35 ft (10.7m)	Standard response		E51DP3	—		E51CLP3	E51CNP3	E51NLP3	⊗ ⊗	E51PLP3	⊗ ⊗

Polarized Reflex

15 ft (4.5m)	Standard response	Visible red	E51DP5	—		E51CLP5	E51CNP5	E51NLP5	⊗ ⊗	E51PLP5	⊗ ⊗
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Diffuse Reflective

8 in (200 mm)	Standard response	Infrared	E51DP2	E51ALP2	⊗ ⊗	E51CLP2	E51CNP2	E51NLP2	⊗ ⊗	E51PLP2	⊗ ⊗
	Fast response		E51DP22	—		E51CLP22	E51CNP22	E51NLP22	⊗ ⊗	E51PLP22	⊗ ⊗
18 in (450 mm)	Standard response		E51DP6	—		E51CLP6	E51CNP6	E51NLP6	⊗ ⊗	E51PLP6	⊗ ⊗
40 in (1m)	Standard response		E51DP4	—		E51CLP4	E51CNP4	E51NLP4	⊗ ⊗	E51PLP4	⊗ ⊗

Thru-Beam Detector

300 ft (90m)	Standard response	—	E51DC1	E51ALC1	⊗ ⊗	E51CLC1	E51CNC1	E51NLC1	⊗ ⊗	E51PLC1	⊗ ⊗
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Thru-Beam Source ^③

300 ft (90m)	—	Infrared with visible red alignment aid	E51DEL	E51ELA ^⑤	E51ELA ^⑤	E51ELA ^⑤	E51ELA ^⑤	E51ELA ^⑤	E51ELA ^⑤
			E51DED	E51EDN ^⑥	E51EDN ^⑥	E51EDN ^⑥	E51EDN ^⑥	E51EDN ^⑥	E51EDN ^⑥

Notes

⊗ ⊗ See listing of compatible connector cables on **Page V8-T5-103**.

^① All sensor heads feature a light or dark operation selector switch which reverses the output function.

^② Logic module must be ordered separately, see **Page V8-T5-102**. These sensor bodies are rated NEMA 4, 4X and 13.

^③ Receptacles feature terminal wiring with a 1/2 in NPT thread at the conduit entrance.

Other connection options are available (see below and **Page V8-T5-103**).

Connection Option		Suffix	Example
20 mm thread at the conduit entrance		20	E51ALP120
Built-in mini-connector with epoxy filled receptacle	2-wire, 3-pin connector	P3	E51ALP1P3 ⊗ ⊗
	4-wire, 5-pin connector	P5	E51CLP1P5 ⊗ ⊗
Pigtail with mini-connector	2-wire, AC/DC	T3	E51RAPT3 ⊗ ⊗
	4-wire, AC	T5	E51RCPT5 ⊗ ⊗
	4-wire, DC	T5	E51RNPT5 ⊗ ⊗
Pre-wired cable with epoxy filled receptacle	8 ft long	S	E51ALP1S
	12 ft long	S12	E51ALP1S12
	20 ft long	S20	E51ALP1S20

^④ Includes sensor head mounted to sensor body. Head can be rotated to any of four discrete positions on body, 90° apart, but is not separate from body.

^⑤ 120 Vac operation.

^⑥ 10–30 Vdc operation.