

Photoelectric, Inductive & Capacitive Sensors

Contents

Consult the Sensing Solutions Product Guide **PG08301004E** for complete information on these Photoelectric, Inductive and Capacitive Sensors.

<i>Description</i>	<i>Page</i>
Photoelectric Sensors	
Enhanced 50 Series	52-2
SM Series	52-2
Comet Series	52-2
Prism Series	52-2
OEM Prism Series	52-3
E58 18 mm Tubular Series	52-3
E58 Harsh Duty Series	52-3
E67 Long Range Perfect Prox® Series	52-3
50 Series	52-4
55 Series	52-4
E51 Limit Switch Style, Modular	52-4
E64 Terminal Base Series	52-4
E65 Miniature Series	52-5
80 Series	52-5
20 Series	52-5
11 Series	52-5
70 Series	52-6
60 Series	52-6
Conveyor Sensor Systems	
E68 Series Integral Sensor Valve	52-7
200 Series Zero Pressure Accumulation	52-7
Sensor Power Supply — NEMA 4, NEMA 1	52-7
Inductive Proximity Sensors	
iProx™	52-8
E57 Premium+ Series	52-8
E57 Premium+ Series Short Barrel	52-8
Global Proximity	52-9
ChipMaster	52-9
SpeedSense	52-9
Ferrous Only Tubular	52-10
Metal Face	52-10
High Current Output	52-10
Small Diameter	52-11
Pancake Style	52-11
Tubular, Nonmetallic Housing	52-11
E52 Rectangular Type	52-12
E55 Limit Switch Style, Nonmetallic Housing	52-12
E51 Limit Switch Style, Modular	52-12
E51 Limit Switch Style, Factory Sealed	52-13
E51 Limit Switch Style, Factory Sealed 6P+	52-13
Capacitive Proximity Sensors	
Capacitive Proximity Sensors Threaded Body Models	52-14
Capacitive Proximity Sensors Smooth Body Models	52-14



For the most current information on all Cutler-Hammer® Photoelectric, Inductive and Capacitive Sensors by Eaton Corporation, visit www.eaton.com



Photoelectric, Inductive and Capacitive Sensors

Product Selection



	Enhanced 50 Series	SM Series	Comet Series	Prism Series
Publication	PG05E25TE	PG05E18TE	PG05E02TE	PG05E13TE
Overview	The Enhanced 50 Series family provides outstanding optical performance and application flexibility in a self-contained, industry-standard package	SM Series photoelectric sensors provide high performance and ease of use in an economical, compact package	This high performance, 18 mm tubular sensor family features a wide variety of models in all sensing modes to solve all of your sensing problems	Prism is a cost-effective line of 18 mm tubular photoelectric sensors with twice the optical gain of other sensors in this product class
Sensing Types and Ranges	<ul style="list-style-type: none"> ■ Thru-Beam: 200 and 500 feet ■ Reflex: 30 feet ■ Polarized Reflex: 16 feet ■ Diffuse Reflective: 5 and 10 feet ■ Clear Object Detector: 45 inches ■ Infrared Fiber Optic: range varies with fiber ■ Visible Fiber Optic: range varies with fiber 	<ul style="list-style-type: none"> ■ Thru-Beam: 50 feet ■ Polarized Reflex: 10 feet ■ Diffuse Reflective: 8 inches ■ Perfect Prox® Background rejection: 2 and 4 inches 	<ul style="list-style-type: none"> ■ Thru-Beam: 20 and 80 feet ■ Reflex: 25 feet ■ Polarized Reflex: 15 and 10 feet ■ Diffuse Reflective: 8 and 24 inches ■ Focused Diffuse Reflective: 1.6 inches ■ Wide Angle Diffuse: 6 inches ■ Fine spot Perfect Prox®: 2 inches ■ Perfect Prox® Background Rejection: 2, 4, 6 and 9 inches ■ Glass and Plastic Fiber Optic: range varies with fiber 	<ul style="list-style-type: none"> ■ Thru-Beam: 20 feet ■ Reflex: 15 feet ■ Polarized Reflex: 10 feet ■ Diffuse Reflective: 8 inches ■ Glass Fiber Optic: range varies with fiber
Product Features	<ul style="list-style-type: none"> ■ High optical performance including 10-foot Diffuse and 500-foot Thru-Beam versions ■ Output options include a high-current 10 Amp SPDT relay ■ Built-in Light/Dark selection on all models ■ Logic options include ON-Delay, OFF-Delay and One-Shot Delay ■ Multiple connector and cable options ■ Industry standard package size 	<ul style="list-style-type: none"> ■ Highly visible LED indicators for power, output and alignment (TargetLock™) ■ TargetLock™ simplifies setup and ensures that the sensor operates at the highest level of reliability possible ■ Perfect Prox® models sense different colored targets at the same range and ignore objects in the background ■ Visible beam on all models let you see exactly where the sensor is pointing ■ Small size ■ Reverse polarity, overload and short circuit protection on all models 	<ul style="list-style-type: none"> ■ The 18 mm tubular body has flat sides for added mounting flexibility ■ Available in universal voltage AC/DC versions as well as DC only models ■ Short circuit protection on all models ■ RIM (Reaction Injection Molding) process completely encapsulates circuits and produces a rugged package ■ Perfect Prox® sensors combine high gain with sharp optical cutoff to detect difficult targets while avoiding false detection of background objects 	<ul style="list-style-type: none"> ■ Isolated output simplifies wiring and allows each sensor to switch AC or DC loads, sink or source ■ Forward or right-angle viewing units have identical optical performance ■ The 18 mm tubular body has flat sides for added mounting flexibility ■ Short circuit protection for loads less than 32V AC or DC ■ High noise immunity ■ AC/DC and DC-only versions available
Operating Voltage	24 – 240V AC and 12 – 240V DC, 10 – 40V DC	18 – 264V AC and 18 – 50V DC 10 – 30V DC	90 – 132V AC and 18 – 50V DC 20 – 264V AC and 15 – 30V DC 10 – 30V DC	20 – 132V AC and 15 – 30V DC 10 – 30V DC
Output Function	Selectable Light or Dark Operate	Light and Dark Operate models available	Selectable Light or Dark Operate	Isolated VMOS solid-state relay output Light and Dark Operate models available
Maximum Load Current	DC units: 250 mA AC/DC units: 300 mA to 10A	AC/DC units — 200 mA DC units — 100 mA (NPN or PNP)	AC/DC units — 300 mA DC units — 250 mA (NPN), 100 mA (PNP)	80 mA AC load 110 mA at 132V DC
Enclosure Ratings	IP67	NEMA 1, 3, 4, 4X, 6, 6P, 12 and 13 IP68	NEMA 1, 2, 3, 4, 4X, 6, 12 and 13	NEMA 1, 2, 3, 4, 4X, 6, 12 and 13
Response Time Range	DC operation: 2 mS AC operation: 15 mS	DC operation: 1 mS AC operation: 16 mS	DC operation: 1 mS AC operation: 10 mS 2W AC/DC Operation: 32 mS	3 mS
Approvals	CSA Approved Certified to UL Standard, UL 508 	UL Listed  C-UL Listed	UL Recognized  C-UL Recognized	UL Recognized  C-UL Recognized

Consult the Sensing Solutions Product Guide, **PG08301004E**, for complete information on sensors, limit switches and machine safety products.

Product Selection


OEM Prism Series

E58 18 mm Tubular Series

E58 Harsh Duty Series

E67 Long Range Perfect Prox® Series

Publication	PG05E20TE	PG05E10TE	PG05E04TE	PG05E23TE
Overview	OEM Prism Sensors are similar to our standard cost-effective Prism family and are optimized for high volume OEM use	Industry standard 18 mm tubular sensors offer wide voltage ranges and reliable performance	E58 Harsh Duty Photoelectric Sensors were designed to withstand your harshest physical, chemical and optical environments, 18 and 30 mm tubular enclosures	This is the highest performance long-range sensor you can buy with background rejection
Sensing Types and Ranges	<ul style="list-style-type: none"> ■ Polarized Reflex: 10 feet ■ Diffuse Reflective: 8 and 24 inches 	<ul style="list-style-type: none"> ■ Thru-Beam: 80 feet ■ Reflex: 25 feet ■ Diffuse Reflective: 8 inches 	<ul style="list-style-type: none"> ■ Thru-Beam: 800 feet ■ Reflex: 59 feet ■ Polarized Reflex: 34 feet ■ Perfect Prox® background rejection: 2, 4, 6 and 11 inches 	<ul style="list-style-type: none"> ■ Perfect Prox®: 24 to 96 inches ■ Standard model pre-set at 6 feet. Fixed ranges of 2 – 8 feet are available.
Product Features	<ul style="list-style-type: none"> ■ The 18 mm tubular body has flat sides for added mounting flexibility ■ Forward or right-angle viewing units have identical optical performance ■ Sensors are shipped bulk-packaged for the convenience of high volume users ■ Dual discrete outputs for simple wiring ■ All models 10 – 30V DC only to meet the evolving needs of your customers 	<ul style="list-style-type: none"> ■ Industry standard 18 mm tubular housing has flat sides allowing it to be mounted against a flat surface ■ Solid polyurethane housing for high resistance to shock and vibration ■ AC/DC models operate up to 264V AC ■ Select models have visible beams for quick setup and alignment ■ Gain adjustment ensures peak optical performance ■ LED output status indicator ■ Extra long 3m cable 	<ul style="list-style-type: none"> ■ Designed to be the most rugged photoelectric sensor available ■ Perfect Prox® background rejection technology for unmatched optical performance ■ Output status indicator is the brightest available and is visible from any angle and in any lighting condition ■ Available in universal voltage AC/DC versions as well as DC only models ■ 18 mm and 30 mm models available 	<ul style="list-style-type: none"> ■ Extended sensing ranges (up to 8 feet) available with background rejection technology ■ No user adjustments required ■ Dual indicators communicate both output and power status from easy-to-see location on the top of the sensor ■ AC/DC models offer isolated contact output for wiring flexibility ■ DC sensors offer both NPN and PNP output ■ Two mounting options for maximum flexibility ■ Fully sealed package
Operating Voltage	10 – 30V DC	20 – 264V AC 10 – 30V DC	2-wire models: 90 – 132V AC and 18 – 50V AC 3- and 4-wire models: 20 – 132V AC and 15 – 30V DC 10 – 30V DC	18 – 30V DC and 20 – 132V AC/DC
Output Function	Light and Dark Operate models available	Light and Dark Operate models available	Light and Dark Operate models available	NPN and PNP (DC) Solid-state relay, 1500V isolation (AC/DC) Light and Dark Operate models available
Maximum Load Current	100 mA	AC — 300 mA DC — 250 mA (NPN) 100 mA (PNP)	AC/DC units — 300 mA (100 mA for 18 mm diameter units) DC units — 250 mA (NPN), 100 mA (PNP)	100 mA DC 75 mA AC/DC
Enclosure Ratings	NEMA 1, 2, 3, 4, 4X, 6, 12 and 13	NEMA 1, 2, 3, 4, 4X, 6, 12 and 13	NEMA 1, 2, 3, 3R, 3S, 4, 4X, 6, 6P, 12, 12K and 13	NEMA 1, 2, 3, 4, 4X, 6, 12 and 13
Response Time Range	1.2 mS	1 mS to 10 mS	2 mS to 35 mS	50 mS (AC/DC) and 15 mS (DC)
Approvals	CE	—	UL Listed C-UL Listed	CE

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Product Selection



50 Series



55 Series

E51 Limit Switch Style,
Modular

E64 Terminal Base Series

Publication	PG05E08TE	PG05E07TE	PG05E21TE	PG05E12TE
Overview	These high performance sensors feature interchangeable outputs and logic functions in a fully sealed, self-contained package	These durable sensors offer high optical performance and a built-in swivel bracket for easy and precise alignment	This versatile sensing family features modular construction, a variety of operating modes and a familiar limit switch style housing	This flexible sensor family provides stability indication, high current relay output and easy terminal wiring
Sensing Types and Ranges	<ul style="list-style-type: none"> ■ Thru-Beam: 100 feet ■ Reflex: 30 feet ■ Polarized Reflex: 15 feet ■ Diffuse Reflective: 10, 24 and 72 inches ■ Glass Fiber Optic: range varies with fiber 	<ul style="list-style-type: none"> ■ Thru-Beam: 100 feet ■ Reflex: 30 feet ■ Polarized Reflex: 15 feet ■ Diffuse Reflective: 10, 24 and 72 inches ■ Glass Fiber Optic: range varies with fiber 	<ul style="list-style-type: none"> ■ Thru-Beam: 300 feet ■ Reflex: 18 and 35 feet ■ Polarized Reflex: 15 feet ■ Diffuse Reflective: 8, 18 and 40 inches ■ Glass Fiber Optic: range varies with fiber 	<ul style="list-style-type: none"> ■ Thru-Beam: 33 feet ■ Reflex: 16.4 feet ■ Polarized Reflex: 11.5 feet ■ Diffuse Reflective: 35 inches
Product Features	<ul style="list-style-type: none"> ■ Interchangeable, plug-in output devices and logic modules ■ Built-in, patented, 360° rotation. 10° tilt ball-swivel base ■ Fully potted construction for use in areas subject to wash-down, high shock and/or vibration ■ Four output options including a 2A SPDT relay 	<ul style="list-style-type: none"> ■ Identical to 50 Series except without provision for interchangeable output or logic functions. ■ Ideal for direct connection to programmable controllers ■ Available in universal voltage AC/DC versions as well as DC only models ■ Built-in, patented, 360° rotation. 10° tilt ball-swivel base ■ Fully potted construction for use in areas subject to wash-down, high shock and/or vibration 	<ul style="list-style-type: none"> ■ Modular construction consisting of a head, sensor body and receptacle ■ Most E51 photoelectric and inductive heads are interchangeable on all E51 sensor bodies for substantial inventory reduction ■ Same general configurations and dimensions as the E50 limit switch ■ Order as complete assemblies or components for stocking and manufacturing flexibility ■ Keyed, for directional head positioning ■ Logic modules available 	<ul style="list-style-type: none"> ■ High performance optics ■ Built-in multi-voltage power supply for use in AC or DC applications ■ Terminal connections with 1/2 inch NPT conduit entrance ■ Available with optional delay timer, adjustable from 0.6 to 16 seconds and field settable for Normal, ON Delay, OFF Delay, ON-OFF Delay or One Shot Delay
Operating Voltage	90 – 132V AC at 60 Hz 100 – 132V AC at 50 Hz 180 – 264V AC at 60 Hz 200 – 264V AC at 50 Hz 10 – 30V DC	20 – 264V AC and 15 – 30V DC 10 – 30V DC See for thru-beam operating voltage	20 – 264V AC/DC; 120V AC; 10 – 30V DC	16 – 240V AC/DC
Output Function	Selectable Light or Dark Operate	Light and Dark Operate models available	N.O. or N.C. (programmable); or N.O. and N.C. (complementary) sensor bodies are available	Selectable Light or Dark Operate
Maximum Load Current	Varies from 50 mA to 2A	AC/DC units — 300 mA DC units — 250 mA (NPN), 100 mA (PNP) Optional 3 Amp SPDT Relay (AC/DC models)	AC — 1.0A continuous DC — 0.6A continuous	1A @ 250V AC 2A @ 30V DC
Enclosure Ratings	NEMA 1, 3, 4, 12 and 13	NEMA 1, 3, 4, 6, 12 and 13	NEMA 3, 3S, 4, 4X, 6, 6P and 13 Class I, II, III, Division 2, Groups A, B, C, D, F and G (conduit entry only)	NEMA 1, 3, 4, 12 and 13 IP66
Response Time Range	2 mS to 18 mS	1 mS to 11 mS	1 mS to 30 mS	20 mS
Approvals	UL Listed CSA Certified	UL Listed CSA Certified	UL Listed, CSA Certified CE (where shown)	CE

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Product Selection



	E65 Miniature Series	80 Series	20 Series	11 Series
Publication	PG05E03TE	PG05E05TE	PG05E22TE	PG05E06TE
Overview	These compact sensors are ideal for a wide variety of applications including reliable detection of clear objects	These sensors provide extremely long sensing ranges and the flexibility of interchangeable sensor heads and logic modules	These heavy-duty sensors are designed for use in harsh environments with constant exposure to weather and physical abuse	The 11 Series is a highly configurable photoelectric sensor with multiple output options including a high current DPDT relay
Sensing Types and Ranges	<ul style="list-style-type: none"> ■ Thru-Beam: 16.5 feet ■ Polarized Reflex: 5.8 feet ■ Diffuse Reflective: 4 and 20 inches ■ Fixed Focus Diffuse: 0.5 inch ■ Plastic Fiber Optic: range varies with fiber ■ Clear Object Sensor: 24 inches 	<ul style="list-style-type: none"> ■ Reflex: 50 feet ■ Diffuse Reflective: 12 feet ■ Focused Diffuse Reflective: 6 inches ■ Glass Fiber Optic: range varies with fiber 	<ul style="list-style-type: none"> ■ Thru-Beam: 700 feet ■ Reflex: 35 and 75 feet ■ Diffuse Reflective: 8 feet ■ Defined Range Diffuse Reflective: 15 inches 	<ul style="list-style-type: none"> ■ Reflex: 20 and 30 feet
Product Features	<ul style="list-style-type: none"> ■ Complete line of miniature sensors including clear object detection models ■ Forward or right-angle viewing with identical optical performance ■ Stability indicator ■ Fiber optic models include built-in DIN rail mounting clip 	<ul style="list-style-type: none"> ■ Combines the advantages of self-contained packaging with the flexibility of interchangeable sensor heads ■ 9 sensor heads, 7 control base units, and 3 logic modules are available to customize the sensor for your application 	<ul style="list-style-type: none"> ■ Sets the industry standard for rugged construction and long range performance ■ Interchangeable logic modules and output devices are contained inside the sealed housing ■ Ideal for outdoor use 	<ul style="list-style-type: none"> ■ Quick disconnect base for easy installation and maintenance ■ Optional logic module provides time delay functions for ON, OFF or both ON/OFF
Operating Voltage	10 – 30V DC	97 – 130V AC 204 – 255V AC 22 – 26V AC 10 – 30V DC	95 – 130V AC 100 – 125V AC 200 – 250V AC	115 – 125V AC 230V AC
Output Function	Selectable Light or Dark Operate	Light or Dark Operate (switch-selected on control unit)	Selectable Light or Dark Operate	Selectable Light or Dark Operate
Maximum Load Current	100 mA NPN or PNP	Varies by model from 50 mA to 1A	Varies by output device from 5 mA to 10A	Varies by output device from 5 mA to 10A
Enclosure Ratings	NEMA 1, 3, 4, 12 and 13 IP66	NEMA 1, 3, 4, 12 and 13	NEMA 3, 4, 6 and 13	NEMA 4 and 13
Response Time Range	330 microseconds to 2 mS	5 mS to 18 mS	1 mS to 30 mS	7 mS
Approvals	UL Recognized 	—	UL Listed CSA Certified	—

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Product Selection



70 Series

60 Series

Publication	PG05E19TE	Contact Cutler-Hammer Sensor Applications Dept. at 1-800-426-9184
Overview	This high performance family offers a wide choice of sensor heads, control units, output devices, logic modules and accessories to solve virtually any sensing problem	Separate control units and sensor heads. Control units available in modular plastic units or self-contained with metal case
Sensing Types and Ranges	<ul style="list-style-type: none"> ■ Thru-Beam: 15, 32, 369 and 743 feet ■ Reflex: 23 feet ■ Curtain-of-Light Reflex: 6 feet ■ Diffuse Reflective: 36 inches ■ Focused Diffuse Reflective: 2.5 inches ■ Glass Fiber Optic: range varies with fiber 	<ul style="list-style-type: none"> ■ Thru-Beam: 206 feet
Product Features	<ul style="list-style-type: none"> ■ Ultra-versatile photoelectric control family ■ Wide choice of sensor heads, control units, output devices, logic modules, and accessories to solve virtually any sensing problem ■ Sensor heads may be mounted up to 1000 feet from the control unit ■ Multiple sensor heads can be connected to a single control unit for special sensing applications ■ Analog control unit provides a voltage level output proportional to the amount of light received by the sensor detector 	<ul style="list-style-type: none"> ■ High performance thru-beam optics ■ Control unit can be mounted up to 1000 feet from sensor heads ■ High temperature sensor heads operate to 212°F (100°C)
Operating Voltage	Self-contained control units: 115V AC or 230V AC versions. Modular control units: 9 – 18V DC	115V AC 230V AC 11 – 15.5V DC
Output Function	Selectable Light or Dark Operate	Selectable Light or Dark Operate
Maximum Load Current	Varies by output device from 5 mA to 10A	Varies by output device from 5 mA to 10A
Enclosure Ratings	Varies with control unit or sensor head selected	Heads: NEMA 3, 4, 6, 12 and 13 Control Units: NEMA 12 (enclosed); NEMA 1 (module)
Response Time Range	0.5 mS to 14 mS	1.6 mS to 16 mS
Approvals	—	—

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Product Selection


E68 Series Integral Sensor Valve

200 Series Zero Pressure Accumulation

**Sensor Power Supply —
NEMA 4, NEMA 1**

Publication	PG05E24TE	PG05E14TE	PG0511TE and PG0506TE
Overview	The Cutler-Hammer® E68 Series Integral Sensor Valve (ISV) from Eaton's electrical business is a complete Zero Pressure Accumulation (ZPA) sensing and control selection	The Cutler-Hammer® 200 Series by Eaton's electrical business is an easy to use Zero Pressure Accumulation (ZPA) sensing and control solution. This sensor system solves the problem of product damage and mishandling caused by mechanical sensor rollers on outdated ZPA conveyors	The Cutler-Hammer® Sensor Power Supply by Eaton's electrical business was specially designed to be used with the 200 Series and E68 Series Zero Pressure Accumulation Systems, but is also suitable for use in a wide variety of general material handling applications. The unit delivers 100W output at 27V DC and supports easy, Class II wiring. The power supply is a tamper-proof, rugged component easily mounted to a conveyor side-channel or support. Internal components are fully protected in a sealed metal housing to stand up to rugged application, ensuring flawless performance in any material handling environment.
Sensing Types and Ranges	<ul style="list-style-type: none"> ■ Polarized Reflex: 10 feet ■ Diffuse Reflective: 3 feet 	<ul style="list-style-type: none"> ■ Polarized Reflex: 10 feet 	
Product Features	<ul style="list-style-type: none"> ■ Self-contained package includes sensor, logic, air valve, and wiring ■ Non-contact, true Zero Pressure Accumulation ■ Multiple algorithms available to provide the exact functionality you require ■ Multiple wiring options available — including NEMA 4 and NEMA 1 varieties ■ Low installation costs ■ Integrated "beam status" contact available to allow direct integration into AC or DC control systems ■ One-touch air fittings for quick installation ■ Low-profile package allows easy integration into conveyor side-channel ■ System designed with sub-4A 24V DC wiring for safety and reduced installation costs ■ Easily interfaced to external control systems for singulated discharge and/or slug release ■ Highly optimized, low-cost power supply ■ Custom brackets and sensor/bracket assemblies available 	<ul style="list-style-type: none"> ■ Non-contact, true Zero Pressure Accumulation control without a PLC ■ Multiple algorithms available to provide the exact functionality you require ■ Additional Gap and Compression timing versions available ■ Low installation costs with pre-measured and connectorized wiring ■ Fits zone lengths between 18 and 60 inches in 6-inch increments and conveyors up to 60 inches wide ■ Compatible with commonly available solenoid-operated air valves ■ Sensors are short circuit protected with automatic reset of sensor when short is removed ■ System designed with sub-4A 24V DC wiring for safety and reduced costs ■ Easily interfaced to external control systems for singulated discharge and/or slug release ■ Highly optimized, low-cost power supply ■ Custom brackets and sensor/bracket assemblies available 	<ul style="list-style-type: none"> ■ Integrated AC junction box features for one-step mounting and wiring without the need for additional accessories or enclosures ■ Built-in DC power health contact allows easy monitoring of power supply status ■ Unique design features a tamper-proof sealed construction to reduce the risk of damage associated with conventional open control-panel type supplies ■ Built-in slug-release input converts an AC or DC input to the appropriate DC signal for integration with the 200 Series and E68 Series Zero Pressure Accumulation Systems ■ Dual output connection terminals to make it easy and convenient to locate the power supply at the center of the cable run
Operating Voltage	27V DC ±10%	18 – 30V DC	9 – 264V AC Input 27V DC Output
Output Function	Air to Drive or Air to Break; optional Isolated Boom Output	Air to Drive or Air to Break	Selectable Sinking or Sourcing 100W
Maximum Load Current	100 mA	100 mA	2A @ 115V; 1A @ 230V 115W, Max. inrush 30A
Enclosure Ratings	NEMA 1, 4	NEMA 1	NEMA 1, 4, 4x
Response Time Range	25 mS max	8 mS	
Approvals	cULus	—	UL Listed CSA Approved

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Product Selection



	iProx™	E57 Premium+ Series	E57 Premium+ Series Short Barrel
Publication	PG05D17TE	PG05D06TE	PG05D12TE
Overview	A programmable, extended range inductive sensor. Features adjustable sensing range and outputs. Built-in advanced capabilities such as band sensing, background metal rejection, time delays and zero speed detection.	High performance inductive sensors include stainless steel models, extended ranges and right-angle sensing	Full featured sensors with shorter overall length than standard tubular sensors
Applications	Metalworking, automotive, machine tool and any metal detection application where the highest sensing performance is desired	A wide variety of applications including those where customers require AC/DC universal inventory sensors	Automation, robotics, transfer lines, conveyors, material handling
Product Features	<ul style="list-style-type: none"> ■ 12, 18 and 30 mm diameters ■ AC 2-wire (20 – 132V) or DC 3-wire (6 – 48V) ■ Longest sensing range for both shielded and unshielded models ■ AutoConfigure output automatically switches the sensor to NPN (sinking) or PNP (sourcing) without user intervention ■ Bright, 360-degree, dual-color LED endbell ■ Stainless steel barrel and mounting nuts, Ryton® shock-resistant face cap, and impact-absorbing potting compound ■ Incredible “nuisance metal rejection” can be enabled to ignore foreground or background metal objects ■ Full programmability using ProxView, a freely available software package, allows for customizing range, outputs (N.O. or N.C.), and enabling advanced features disabled by default, such as band sensing under or overspeed detection and output delays ■ Resistance to extreme temperatures (-40°C) ■ Noise immunity of 10 – 20 volts/meter 	<ul style="list-style-type: none"> ■ 12, 18 and 30 mm diameters ■ AC 2-wire, AC/DC and DC 3-wire ■ 360° LED indicators standard ■ Long range models sense further than typical inductive sensors ■ N.O. or N.C. outputs ■ Variety of terminations ■ Resettable short circuit protected and reverse polarity on select models ■ Robust stainless steel tubes, shock-resistant front caps, polycarbonate end bells, and impact-absorbing potting compound ■ Noise immunity of 10 – 20 volts/meter reduces problems associated with electrical noise 	<ul style="list-style-type: none"> ■ Available in 12, 18 and 30 mm diameters ■ 2-wire sensors offer 20 – 250V AC or DC operation; AC only 20 – 135V AC ■ 3-wire models operate on 6 – 30V DC ■ 360° LED indicators ■ Same sensing ranges as standard sensors ■ High flex extra long 5m cable or pigtail micro-pin connector ■ Short circuit protection on AC/DC and DC-only versions
Contact Ratings	AC — 250 – 500 mA DC — 300 – 500 mA	AC mode — 250 – 500 mA DC mode — 200 mA	AC — 200 – 500 mA continuous DC — 500 mA continuous
Enclosure Ratings	NEMA 4, 4X, 6, 6P, 12, 13 IEC — IP67	NEMA 4, 4X, 6, 6P, 12, 13 IEC — IP67	NEMA 4, 4X, 6, 6P, 12, 13 IEC — IP67
Construction	Stainless steel	Stainless steel Extended range models: nickel plated brass	Stainless steel
Approvals	C-UL Listed	C-UL Listed (AC/DC and DC-only models)	UL Listed CSA Certified (AC/DC and DC-only models)

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Product Selection




Global Proximity



ChipMaster



SpeedSense

	PG05D03TE	PG05D19TE	PG05D20TE
Publication	PG05D03TE	PG05D19TE	PG05D20TE
Overview	This full-line, tubular proximity sensor family provides a cost-effective solution for high volume OEM use	The ChipMaster sensor is an application-specific sensing solution engineered to better tolerate metal chips on or near the sensor face. An embedded microprocessor allows ChipMaster to better discriminate between metal chips and true targets within the sensing field.	SpeedSense is one of the first tubular inductive sensors to feature built-in speed detection technology. Using SpeedSense, you can reliably detect when an object rotation or lateral movement slows below a fixed point.
Applications	Machine tool detection, press applications, cam detection, material handling, valve and shaft position, automotive assembly	Automotive, metal cutting, forming and stamping	Automotive, machine tool, material handling
Product Features	<ul style="list-style-type: none"> ■ 8, 12, 18 and 30 mm diameters ■ 2-wire sensors available in AC or DC versions ■ 3-wire sensors available in DC versions ■ Shielded and unshielded models ■ LED indicators standard ■ Cable, micro-connector and nano-connector terminations ■ Short circuit protection on DC models 	<ul style="list-style-type: none"> ■ Tolerates metal chips within sensing field better than standard inductive proximity sensors ■ Auto-configure output allows for automatic detection of NPN or PNP ■ Rugged stainless steel housing with shock absorbent potting compound ■ Resistant to extreme temperatures (-40°C) and high pressure washdown ■ High electrical noise immunity of 20 V/m 	<ul style="list-style-type: none"> ■ Built-in speed detection technology activates the sensor when the target's rotational or lateral speed slows ■ Reliably detects metal targets at up to three times range of conventional inductive proximity sensors ■ Auto-configure output allows for automatic detection of NPN or PNP ■ Resistant to extreme temperature (-40°C) and high pressure washdown ■ High electrical noise immunity of 20 V/m
Contact Ratings	AC mode — 200 mA DC mode — 100 mA	AC — 250 – 500 mA DC — 300 – 500 mA	AC — 250 – 500 mA DC — 300 – 500 mA
Enclosure Ratings	IP67	NEMA 4, 4X, 6, 6P, 12, 13	NEMA 4, 4X, 6, 6P, 12, 13
Construction	Nickel plated brass 8 mm Nano Stainless steel	Stainless steel	Stainless steel
Approvals	 (DC models only)	C-UL Listed	C-UL Listed

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Product Selection

Ferrous Only Tubular

Metal Face

High Current Output

	PG05D08TE	PG05D09TE	PG05D05TE
Publication	PG05D08TE	PG05D09TE	PG05D05TE
Overview	Sensors designed to detect only ferrous metals (steel/iron)	Tough sensors with thick stainless steel sensing faces and barrels	DC sensors which can carry extremely large continuous inrush current
Applications	Workcell applications Automotive and aircraft production	Metal cutting operations where damage to sensor face could occur	Heavy-duty vehicles, cement mixers, lift trucks, front end loaders, farm equipment
Product Features	<ul style="list-style-type: none"> ■ 18 mm diameters ■ 2-wire AC or 3-wire DC ■ N.O. or N.C. outputs ■ Micro- and mini-pin terminations ■ LED indicators 	<ul style="list-style-type: none"> ■ 12, 18 and 30 mm diameters ■ 2-wire AC or 3-wire DC ■ 20 mil thick stainless steel face ■ 303 stainless steel barrel ■ LED indicator ■ 2 meter cable, micro- and mini-pin connections 	<ul style="list-style-type: none"> ■ 30 mm diameter stainless steel housing ■ Solid-state output for 12 ampere continuous — 50 ampere inrush capacity ■ -40° to 158°F (-40° to 70°C) temperature range ■ N.O. and N.C. isolated outputs ■ Heavy gauge SJO cable
Contact Ratings	AC — 500 mA continuous DC — 200 mA continuous	AC — 500 mA continuous DC — 200 mA continuous	12 ampere continuous 50 ampere inrush
Enclosure Ratings	NEMA 4, 4X, 6, 6P, 12, 13 IEC — IP67	NEMA 4, 4X, 6, 6P, 12, 13 IEC — IP67	NEMA 4, 4X, 6, 6P, 12, 13 IEC — IP67
Construction	Stainless steel	Stainless steel	Stainless steel
Approvals	UL Listed CSA Certified	UL Listed CSA Certified	—



Product Selection


	Small Diameter	Pancake Style	Tubular, Nonmetallic Housing
Publication	PG05D13TE	PG05D02TE	PG05D07TE
Overview	Small diameter (4, 5, 6.5 and 8 mm) tubular housings for tight sensing applications	Self-contained sensors capable of sensing up to 3.94 inches (100 mm)	Tubular sensors with nonmetallic housings offer high corrosion resistance
Applications	Automation equipment, robotics, machine tool, counting, sorting	Oil rig operations, floor conveyors, automotive assembly, overhead cranes	Food processing lines High washdown environments
Product Features	<ul style="list-style-type: none"> ■ Variety of diameters in stainless steel housings ■ PVC cable, micro- and nano-pin connections ■ LED indicators standard ■ Short overall lengths ■ Short circuit and reverse polarity protection 	<ul style="list-style-type: none"> ■ 40, 50, 70 and 100 mm sensing distances ■ AC or DC voltages ■ LED output indication ■ Quick disconnect option ■ Short circuit protected in DC ■ Longest sensing distances available 	<ul style="list-style-type: none"> ■ 12, 18 and 30 mm diameters shielded and unshielded sensing ■ Normally open or closed outputs ■ AC and DC voltages ■ Tough ABS plastic housing ■ Output LED on all models
Contact Ratings	DC — 200 mA maximum	AC — 500 mA continuous DC — 200 mA continuous	AC — 150 DC — 200
Enclosure Ratings	NEMA 4, 4X, 6, 6P, 12, 13 IEC — IP67	NEMA 4, 4X, 12, 13 IEC — IP66 (some models also rated NEMA 6)	NEMA 3, 3S, 4, 4X, 13 IEC — IP66
Construction	Stainless steel	Polyester	ABS plastic
Approvals	CE	—	—

Product Selection



E52 Rectangular Type

E55 Limit Switch Style,
Nonmetallic HousingE51 Limit Switch Style,
Modular

Publication	PG05D04TE	PG05D10TE	PG05D11TE
Overview	A variety of small rectangular sensors for limited space applications	These nonmetallic sensors provide corrosion resistance in a limit switch style housing	Modular design allows maximum use of inventories in these Limit Switch style housings. Solid-state circuitry in a variety of sensing ranges
Applications	Tight applications where conventional sensor are too large	Food processing lines High washdown environments	Machine tool, punch presses, automotive, conveyor systems
Product Features	<ul style="list-style-type: none"> ■ Variety of housing styles R12, R18, Q16, Q25 ■ 10 to 30V DC ■ NPN and PNP output ■ Short circuit protection ■ LED indicator for output status 	<ul style="list-style-type: none"> ■ 5 position head can be top mounted or in any of four side positions ■ Long sensing ranges up to 40 mm ■ Normally open or closed outputs ■ AC voltages ■ Tough PBT resin housing 	<ul style="list-style-type: none"> ■ Modular heads, switch bodies, receptacles ■ Shielded or unshielded sensing ranges ■ Solid-state electronics ■ Viton gasket seals ■ LED indicators for power and output status ■ Top and side sensing heads ■ Alternate frequency for side by side operation ■ Components individually labeled for easy identification
Contact Ratings	DC — 100 mA maximum	AC — 400 mA	AC — 1 ampere continuous DC — 0.6 ampere continuous
Enclosure Ratings	NEMA 1, 2, 3, 3S, 4, 12 IEC — IP66	NEMA 4, 4X, 6, 12, 13 IEC — IP67	NEMA 3, 3S, 4, 4X, 6, 6P, 12, 13 IEC — IP67 Class I, Class II, Division 2 Groups A, B, C, D, F and G; Class III
Construction	PBT Composition housing	PBT resin	Die Cast Zinc Gasket Material — Viton
Approvals	—	—	UL Listed CSA Certified CE (most models)

Product Selection



**E51 Limit Switch Style,
Factory Sealed**

**E51 Limit Switch Style, Factory Sealed
6P+**

Publication	PG05D11TE	PG05D14TE
Overview	Designed specifically to withstand the penetrating properties of new cutting fluids (coolants), acid or caustic washes, salt spray, severe vibration, shock and temperature fluctuations, grit and debris	Completely epoxy filled in unitized, one piece Limit Switch style construction for reliable performance under the most adverse of environmental conditions
Applications	Heavy coolant/cutting oil exposure	All corrosive environments — Coolants/ cutting oils Automotive applications
Product Features	<ul style="list-style-type: none"> ■ Epoxy filled pre-wired receptacle/switch body ■ #16 gauge 8 foot cable standard with optional longer lengths ■ Utilizes same sensing heads as modular series ■ LED indicators for power and output status ■ Tamper proof screws between switch body and receptacle ■ Available in quick disconnect styles 	<ul style="list-style-type: none"> ■ One piece housing on switch body/ receptacle ■ Head and housing totally epoxy encapsulated ■ Side sensing head can be unfastened and moved to any of 4 positions ■ Quick disconnect options ■ Corrosive resistant epoxy coated housing
Contact Ratings	AC — 1 ampere continuous DC — 0.6 ampere continuous	AC — 1 ampere continuous DC — 0.6 ampere continuous
Enclosure Ratings	NEMA 3, 3S, 4, 4X, 6, 6P, 12, 13 IEC — IP67	NEMA 3, 3S, 4, 4X, 6, 6P, 12, 13 IEC — IP67
Construction	Die Cast Zinc Gasket Material — Viton	Die Cast Zinc Gasket Material — Viton
Approvals	UL Listed CSA Certified CE (most models)	—

Product Selection

**Capacitive Proximity Sensors
Threaded Body Models**
**Capacitive Proximity Sensors
Smooth Body Models**

Publication	PG05A01TE	PG05A02TE
Overview	These self-contained devices will detect both metallic and nonmetallic targets. A full threaded housing provides ease of mounting.	Smooth body capacitive models feature longer ranges than our threaded body models and include a convenient mounting bracket.
Applications	Liquid level control Nonmetallic targets	Liquid level control Nonmetallic targets
Product Features	<ul style="list-style-type: none"> ■ 18 and 30 mm diameters with threaded housing ■ Shielded and unshielded sensing ■ 2-wire AC — 20 to 250V ■ 3-wire DC — 10 to 35V, NPN and PNP ■ 2 meter PVC cable or 4-pin micro connector ■ Short circuit and reverse polarity protected (DC models) ■ LED indicator ■ Sensitivity adjustment 	<ul style="list-style-type: none"> ■ 34 mm diameter ■ Shielded and unshielded sensing ■ 2-wire AC — 20 to 250V ■ 3-wire DC — 10 to 35V, NPN and PNP ■ 2 meter PVC cable or 4-pin micro connector ■ Short circuit and reverse polarity protected (DC models) ■ LED indicator ■ Sensitivity adjustment ■ Includes mounting bracket
Contact Ratings	AC — 300 mA DC — 300 mA	AC — 300 mA DC — 300 mA
Enclosure Ratings	NEMA 1, 2, 3, 3S, 4, 12, 13 IP65	NEMA 1, 2, 3, 3S, 4, 12, 13 IP65
Construction	POM Nuts, Nylon 66	POM Nuts, Nylon 66