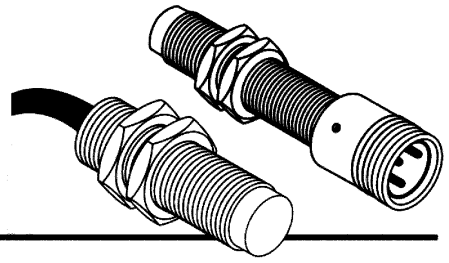
8mm | Inductive Tubular Threaded Barrel | DC



1mm (Shielded) and 2mm (Unshielded) Sensing Ranges

Connector Type	Circuit Description	Housing Material	Housing Length	Shielded Model No.	Unshielded Model No.	Maximum Load Current	Leakage Current	Voltage Drop*	Maximum Switching Frequency		Short Circuit Protected
									Shielded	Unshielded	
DC 10-30V Metal											
4-pin Euro	3W, NPN, NO	Metal	50mm	**ET310-10151**	**ET310-11151**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	no
4-pin Euro	3W, NPN, NO	Metal	66mm	**ET110-10151**	**ET110-11151**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	yes
4-pin Euro	3W, PNP, NO	Metal	50mm	**ET311-10151**	**ET311-11151**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	no
4-pin Euro	3W, PNP, NO	Metal	66mm	**ET111-10151**	**ET111-11151**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	yes
6.6' Cable	3W, NPN, NO	Metal	35mm	**ET310-10110**	**ET310-11110**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	no
☞ 6.6' Cable	3W, NPN, NO	Metal	50mm	**ET110-10110**	**ET110-11110**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	yes
6.6' Cable	3W, PNP, NO	Metal	35mm	**ET311-10110**	**ET311-11110**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	no
☞ 6.6' Cable	3W, PNP, NO	Metal	50mm	**ET111-10110**	**ET111-11110**	200mA	<10µA	<2.5 VDC	1KHz	800Hz	yes
NAMUR 5-25 VDC											
6.6' Cable	Analog	Metal	30mm	**ET112-10310**	—	N/A	—	—	1KHz	—	N/A

* Across conducting sensor

☞ A Namco "Best Bet", appropriate for most standard applications; offers best value and availabilty.

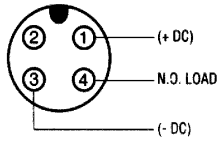
Common Sensor Characteristics

8mm DIAMETER DC SENSORS	
Shielded Sensing Range (±10%)	1mm
Unshielded Sensing Range (±10%)	2mm
Standard Target	8x8x1mm (mild steel)
Repeatability	± 2%
Hysteresis	3-8% (typ.); 15% (max.)
Temperature Drift (max.)	±15%
Ambient Temperature Range	-13°F to +158°F
Reverse Polarity Protected	yes
Current Consumption	<10mA
NEMA Enclosure Type	1, 3, 4, 6, 13
LED Indicator	red = target
Metal Housings	Chrome Plated Brass
Plastic Housings	N/A
Cable Type	PVC
Shipping Weight	Connector model: 3 oz. Cable model: 8 oz.

Circuit Drawings

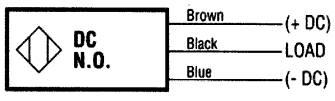
EURO CONNECTOR MODELS — Male view shown

3 Wire DC N.O.



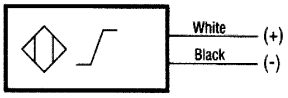
CABLE MODELS

3 Wire DC N.O.



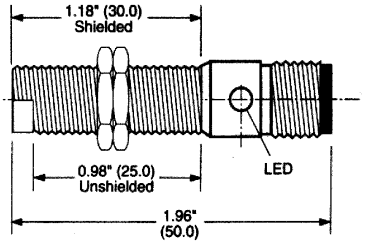
NAMUR MODELS

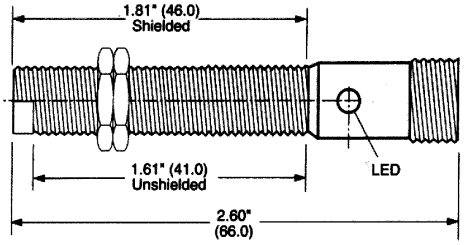
NAMUR



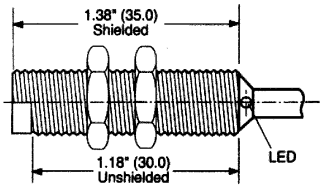
Dimensional Drawings — 8mm-DC

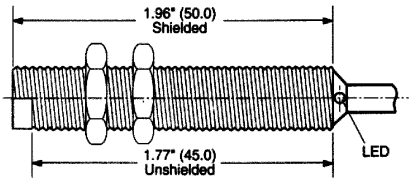
EURO CONNECTOR MODELS — Body threads = M8x1



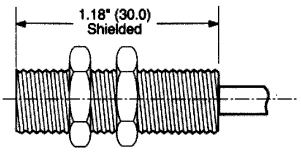


CABLE MODELS





CABLE MODELS-NAMUR



11 CONTROLS & SENSORS

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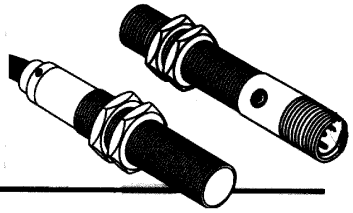
12mm | Inductive Tubular Threaded Barrel | DC



2mm (Shielded) and 4mm (Unshielded) Sensing Ranges

Connector Type	Circuit Description	Housing Material	Housing Length	Shielded Model No.	Unshielded Model No.	Maximum Load Current	Leakage Current	Voltage Drop*	Maximum Switching Frequency		Short Circuit Protected
									Shielded	Unshielded	
DC 10-30V Metal											
4-pin Euro	3W, NPN, NO	Metal	54mm	ET310-22151	ET310-23151	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
4-pin Euro	4W, NPN, NO/NC	Metal	54mm	ET310-22651	ET310-23651	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
4-pin Euro	3W, PNP, NO	Metal	54mm	ET311-22151	ET311-23151	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
4-pin Euro	4W, PNP, NO/NC	Metal	54mm	ET311-22651	ET311-23651	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
6.6' Cable	3W, NPN, NO	Metal	35mm	ET310-22110	ET310-23110	200mA	<10µA	<2.5 VDC	1200Hz	800Hz	yes
☞ 6.6' Cable	3W, NPN, NO	Metal	78mm	ET110-22110	ET110-23110	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
6.6' Cable	4W, NPN, NO/NC	Metal	50mm	ET310-22610	ET310-23610	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
6.6' Cable	3W, PNP, NO	Metal	35mm	ET311-22110	ET311-23110	200mA	<10µA	<2.5 VDC	1200Hz	800Hz	yes
☞ 6.6' Cable	3W, PNP, NO	Metal	78mm	ET111-22110	ET111-23110	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
☞ 6.6' Cable	4W, PNP, NO/NC	Metal	50mm	ET311-22610	ET311-23610	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
DC 10-30V Plastic											
6.6' Cable	3W, NPN, NO	Plastic	35mm	ET310-42110	ET310-43110	200mA	<10µA	<2.5 VDC	1200Hz	800Hz	yes
6.6' Cable	3W, NPN, NO	Plastic	75mm	ET210-22110	ET210-23110	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
6.6' Cable	4W, NPN, NO/NC	Plastic	50mm	ET310-42610	ET310-43610	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
6.6' Cable	3W, PNP, NO	Plastic	35mm	ET311-42110	ET311-43110	200mA	<10µA	<2.5 VDC	1200Hz	800Hz	yes
6.6' Cable	3W, PNP, NO	Plastic	75mm	ET211-22110	ET211-23110	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
6.6' Cable	4W, PNP, NO/NC	Plastic	50mm	ET311-42610	ET311-43610	400mA	<10µA	<2.5 VDC	700Hz	400Hz	yes
NAMUR 5-25 VDC											
6.6' Cable	Analog	Metal	30mm	ET112-20310	ET112-21310	N/A	—	—	800Hz	400Hz	N/A
6.6' Cable	Analog	Plastic	30mm	ET212-20310	ET212-21310	N/A	—	—	800Hz	400Hz	N/A

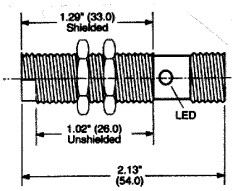
* Across conducting sensor

☞ A Namco "Best Bet", appropriate for most standard applications; offers best value and availability.

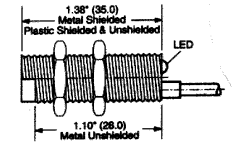
Dimensional Drawings

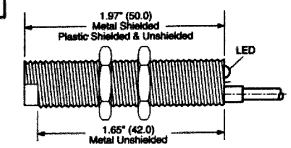
EURO CONNECTOR MODELS

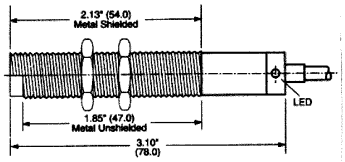
Body threads = M12x1

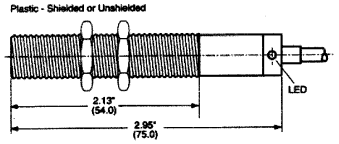


CABLE MODELS

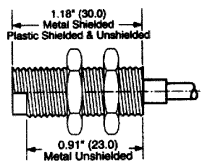








CABLE MODELS-NAMUR

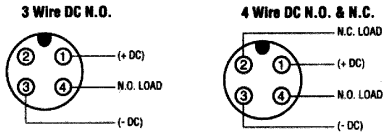


Common Sensor Characteristics

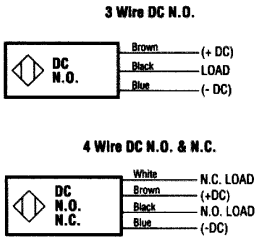
12mm DIAMETER DC SENSORS	
Shielded Sensing Range (±10%)	2mm
Unshielded Sensing Range (±10%)	4mm
Standard Target	12x12x1mm (mild steel)
Repeatability	± 2%
Hysteresis	3-8% (typ.); 15% (max.)
Temperature Drift (max.)	±15%
Ambient Temperature Range	-13°F to +158°F
Reverse Polarity Protected	yes
Current Consumption	3W DC = <6mA 4W DC = <10mA
NEMA Enclosure Type Metal Plastic	 1, 3, 4, 6, 13 1, 3, 4, 4x, 6, 13
LED Indicator	red = target
Metal Housings	Chrome Plated Brass
Plastic Housings	Ultradur®
Cable Type	PVC
Shipping Weight	Connector model: 4 oz. Cable model: 9 oz.

Circuit Drawings

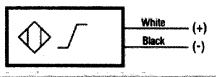
EURO CONNECTOR MODELS — Male view shown



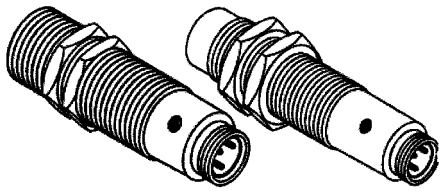
CABLE MODELS



NAMUR MODELS



18mm | Inductive Tubular Threaded Barrel | DC



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CONTROLS & SENSORS

5mm (Shielded) and 8mm (Unshielded) Sensing Ranges

	Connector Type	Circuit Description	Housing Material	Housing Length	Shielded Model No.	Unshielded Model No.	Maximum Load Current	Leakage Current	Voltage Drop*	Maximum Switching Frequency		Short Circuit Protected
										Shielded	Unshielded	
	DC 10-30V Metal											
☞	4-pin Euro	3W, NPN, NO	Metal	76mm	ET310-32151	ET310-33151	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	4-pin Euro	4W, NPN, NO/NC	Metal	76mm	ET310-32651	ET310-33651	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
☞	4-pin Euro	3W, PNP, NO	Metal	76mm	ET311-32151	ET311-33151	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	4-pin Euro	4W, PNP, NO/NC	Metal	76mm	ET311-32651	ET311-33651	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
☞	4-pin Mini	3W, NPN, NO	Metal	70mm	ET310-32100	ET310-33100	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	4-pin Mini	4W, NPN, NO/NC	Metal	70mm	ET310-32600	ET310-33600	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
☞	4-pin Mini	3W, PNP, NO	Metal	70mm	ET311-32100	ET311-33100	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	4-pin Mini	4W, PNP, NO/NC	Metal	70mm	ET311-32600	ET311-33600	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
☞	6.6' Cable	3W, NPN, NO	Metal	50mm	ET310-32110	ET310-33110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	3W, NPN, NO	Metal	80mm	ET110-32110	ET110-33110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	4W, NPN, NO/NC	Metal	50mm	ET310-32610	ET310-33610	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
☞	6.6' Cable	3W, PNP, NO	Metal	50mm	ET311-32110	ET311-33110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	3W, PNP, NO	Metal	80mm	ET111-32110	ET111-33110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	4W, PNP, NO/NC	Metal	50mm	ET311-32610	ET311-33610	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	DC 10-30V Plastic											
☞	6.6' Cable	3W, NPN, NO	Plastic	50mm	ET310-52110	ET310-53110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	3W, NPN, NO	Plastic	80mm	ET210-32110	ET210-33110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	4W, NPN, NO/NC	Plastic	50mm	ET310-52610	ET310-53610	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
☞	6.6' Cable	3W, PNP, NO	Plastic	50mm	ET311-52110	ET311-53110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	3W, PNP, NO	Plastic	80mm	ET211-32110	ET211-33110	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	6.6' Cable	4W, PNP, NO/NC	Plastic	50mm	ET311-52610	ET311-53610	400mA	<10µA	<2.5 VDC	300Hz	250Hz	yes
	NAMUR 5-25 VDC											
	6.6' Cable	Analog	Metal	30mm	ET112-36310	ET112-31310	N/A	—	—	500Hz	200Hz	N/A
	6.6' Cable	Analog	Plastic	30mm	ET212-36310	ET212-31310	N/A	—	—	500Hz	200Hz	N/A

* Across conducting sensor

☞ A Namco "Best Bet", appropriate for most standard applications; offers best value and availability.

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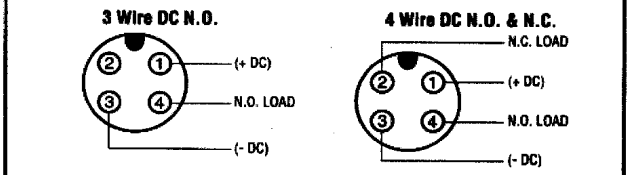
Common Sensor Characteristics

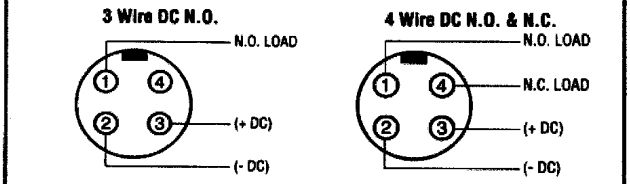
18mm DIAMETER DC SENSORS	
Shielded Sensing Range (±10%)	5mm
Unshielded Sensing Range (±10%)	8mm
Standard Target (mm) (mild steel)	18x18x1 (Shielded) 24x24x1 (Unshielded)
Repeatability	±2%
Hysteresis	3-8% (typ.); 15% (max.)
Temperature Drift (max.)	±15%
Ambient Temperature Range	-13°F to +158°F
Reverse Polarity Protected	yes
Current Consumption	<1.5mA
NEMA Enclosure Type Metal Plastic	 1, 3, 4, 6, 13 1, 3, 4, 4x, 6, 13
LED Indicator	red = target
Metal Housings	Chrome Plated Brass
Plastic Housings	Ultradur®
Cable Type	PVC
Shipping Weight	Connector model: 4 oz. Cable model: 9 oz.

Circuit Drawings

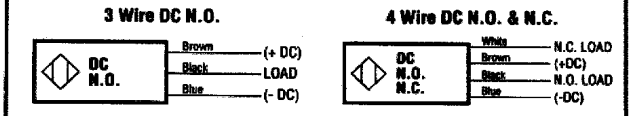
EURO CONNECTOR MODELS — Male views shown



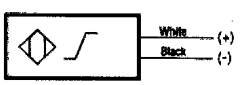
MINI CONNECTOR MODELS — Male views shown



CABLE MODELS



NAMUR MODELS

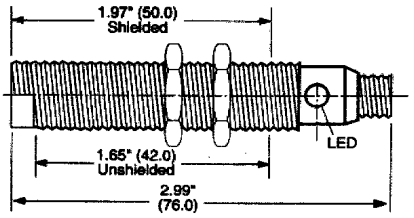


Dimensional Drawings

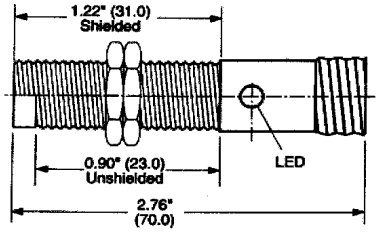
18mm-DC

EURO CONNECTOR MODELS

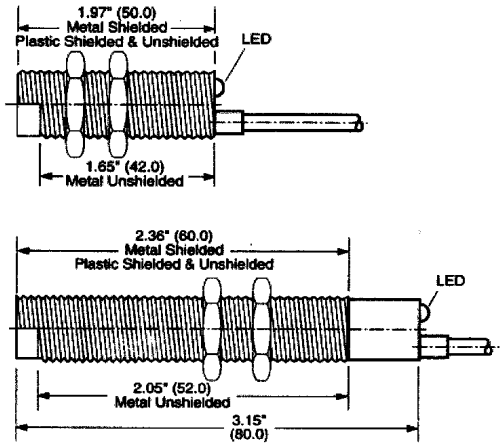
Body threads - M18x1



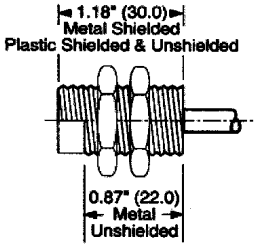
MINI CONNECTOR MODELS



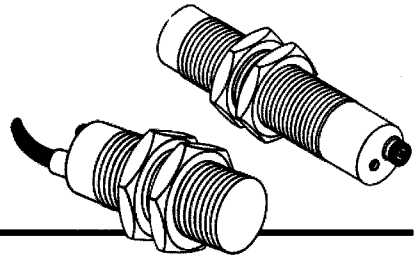
CABLE MODELS



CABLE MODELS-NAMUR



30mm | Inductive Tubular Threaded Barrel | DC



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CONTROLS & SENSORS

10mm (Shielded) and 15mm (Unshielded) Sensing Ranges

	Connector Type	Circuit Description	Housing Material	Housing Length	Shielded Model No.	Unshielded Model No.	Maximum Load Current	Leakage Current	Voltage Drop*	Maximum Switching Frequency		Short Circuit Protected
										Shielded	Unshielded	
	DC 10-30V Metal											
☞	4-pin Euro	3W, NPN, NO	Metal	73mm	ET310-62151	ET310-63151	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	4-pin Euro	4W, NPN, NO/NC	Metal	73mm	ET310-62651	ET310-63651	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
☞	4-pin Euro	3W, PNP, NO	Metal	73mm	ET311-62151	ET311-63151	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	4-pin Euro	4W, PNP, NO/NC	Metal	73mm	ET311-62651	ET311-63651	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
☞	4-pin Mini	3W, NPN, NO	Metal	78mm	ET110-42100	ET110-43100	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
☞	4-pin Mini	3W, PNP, NO	Metal	78mm	ET111-42100	ET111-43100	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
☞	6.6' Cable	3W, NPN, NO	Metal	50mm	ET310-62110	ET310-63110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	3W, NPN, NO	Metal	80mm	ET110-42110	ET110-43110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	4W, NPN, NO/NC	Metal	50mm	ET310-62610	ET310-63610	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
☞	6.6' Cable	3W, PNP, NO	Metal	50mm	ET311-62110	ET311-63110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	3W, PNP, NO	Metal	80mm	ET111-42110	ET111-43110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	4W, PNP, NO/NC	Metal	50mm	ET311-62610	ET311-63610	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	DC 10-30V Plastic											
☞	6.6' Cable	3W, NPN, NO	Plastic	50mm	ET310-72110	ET310-73110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	3W, NPN, NO	Plastic	80mm	ET210-42110	ET210-43110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	4W, NPN, NO/NC	Plastic	50mm	ET310-72610	ET310-73610	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
☞	6.6' Cable	3W, PNP, NO	Plastic	50mm	ET311-72110	ET311-73110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	3W, PNP, NO	Plastic	80mm	ET211-42110	ET211-43110	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	6.6' Cable	4W, PNP, NO/NC	Plastic	50mm	ET311-72610	ET311-73610	400mA	<10µA	<2.5 VDC	200Hz	100Hz	yes
	NAMUR 5-25 VDC											
	6.6' Cable	Analog	Metal	40mm (Sh) 42mm (UnSh)	ET112-40310	ET112-41310	N/A	—	—	300Hz	250Hz	N/A
	6.6' Cable	Analog	Plastic	40mm	ET212-40310	ET212-41310	N/A	—	—	300Hz	250Hz	N/A

* Across conducting sensor

☞ A Namco "Best Bet", appropriate for most standard applications; offers best value and availability.

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30mm-DC

Common Sensor Characteristics

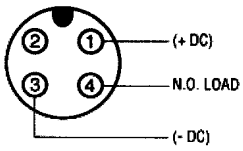
30mm DIAMETER DC SENSORS	
Shielded Sensing Range (±10%)	10mm
Unshielded Sensing Range (±10%)	15mm
Standard Target (mm) (mild steel)	30x30x1 (Shielded) 45x45x1 (Unshielded)
Repeatability	±2%
Hysteresis	3-8% (typ.); 15% (max.)
Temperature Drift (max.)	±15%
Ambient Temperature Range	-13°F to +158°F
Reverse Polarity Protected	yes
Current Consumption	<1.5mA
NEMA Enclosure Type Metal Plastic	 1, 3, 4, 6, 13 1, 3, 4, 4x, 6, 13
LED Indicator	red = target
Metal Housings	Chrome Plated Brass
Plastic Housings	Ultradur®
Cable Type	PVC
Shipping Weight	Conductor model: 5 oz. Cable model: 10 oz.

Circuit Drawings

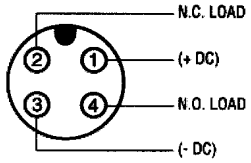
EURO CONNECTOR MODELS

Male views shown

3 Wire DC N.O.



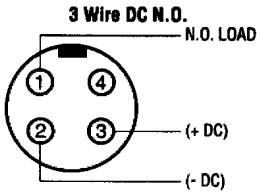
4 Wire DC N.O. & N.C.



MINI CONNECTOR MODELS

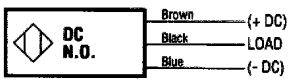
Male view shown

3 Wire DC N.O.

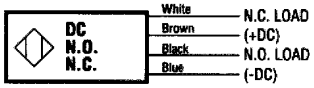


CABLE MODELS

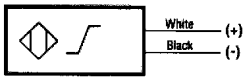
3 Wire DC N.O.



4 Wire DC N.O. & N.C.



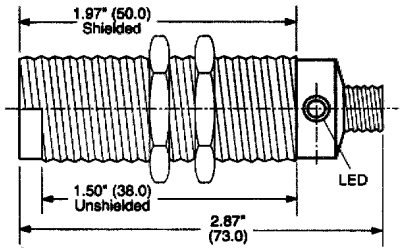
NAMUR MODELS



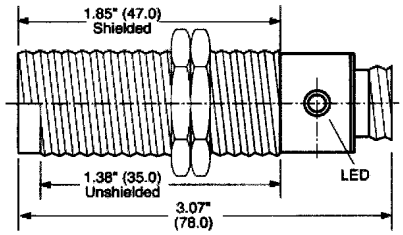
Dimensional Drawings

EURO CONNECTOR MODELS

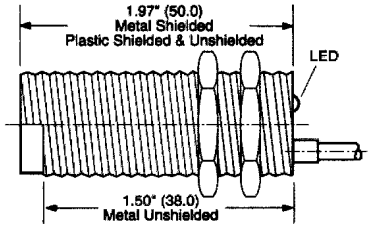
Body threads = M30x1.5

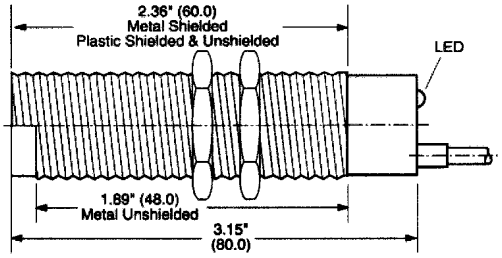


MINI CONNECTOR MODELS

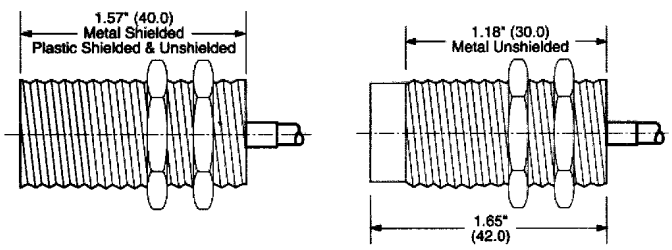


CABLE MODELS

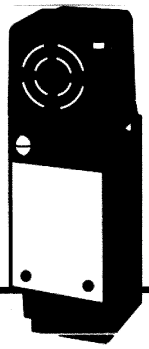




CABLE MODELS-NAMUR



Inductive Limit Switch Style | AC/DC



AC/DC 20-230V 13mm (Unshielded) Sensing Range

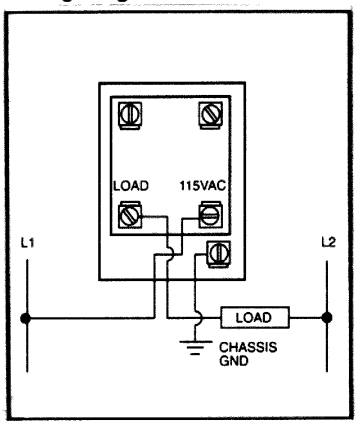
Connector Type	Circuit Description	Sensing Face	Housing Dimensions	Shielded Model No.	Unshielded Model No.	Maximum Load Current	Leakage Current	Voltage Drop*	Maximum Operating Frequency	Short Circuit Protected
COMPLETE ASSEMBLIES										
Terminal	2W, AC/DC, NO	Side	43x41x117mm	—	**EE630-50510**	500mA	1.7mA	<10V	15Hz	yes
Terminal	2W, AC/DC, NC	Side	43x41x117mm	—	**EE630-50610**	500mA	1.7mA	<10V	15Hz	yes
Terminal	2W, AC/DC, NO	Top	43x41x117mm	—	**EE630-54510**	500mA	1.7mA	<10V	15Hz	yes
Terminal	2W, AC/DC, NC	Top	43x41x117mm	—	**EE630-54610**	500mA	1.7mA	<10V	15Hz	yes
SENSING HEADS										
—	2W, AC/DC, NO	Side	N/A	—	**EE631-00510**	500mA	1.7mA	<10V	15Hz	yes
—	2W, AC/DC, NC	Side	N/A	—	**EE631-00610**	500mA	1.7mA	<10V	15Hz	yes
—	2W, AC/DC, NO	Top	N/A	—	**EE631-04510**	500mA	1.7mA	<10V	15Hz	yes
—	2W, AC/DC, NC	Top	N/A	—	**EE631-04610**	500mA	1.7mA	<10V	15Hz	yes
BASE ASSEMBLY										
Terminal	—	—	N/A	—	**EE631-51000**	500mA	1.7mA	<10V	15Hz	yes

* Across conducting sensor

Common Sensor Characteristics

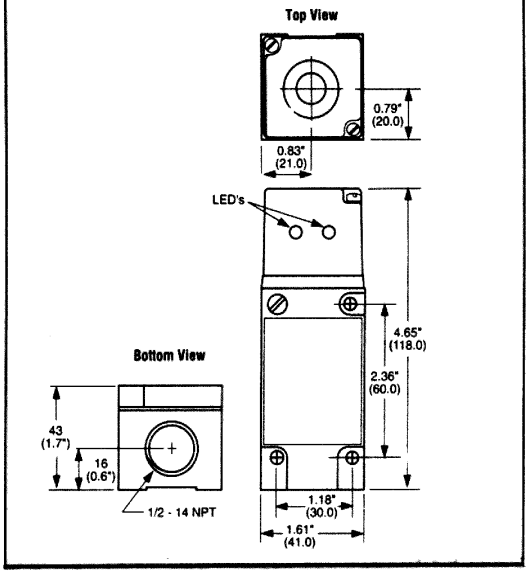
LIMIT SWITCH STYLE SENSORS	
Sensing Distance	0.5" ±10%
Repeatability	<±1%
Hysteresis	10%
Ambient Temperature Range	-4°F to +158°F
Reverse Polarity Protected	yes
NEMA Enclosure Type	1, 12, 13
LED Indicators	red = power green = target
Shipping Weight	14 oz.

Wiring Diagram



Dimensional Drawings

TOP SENSE MODELS



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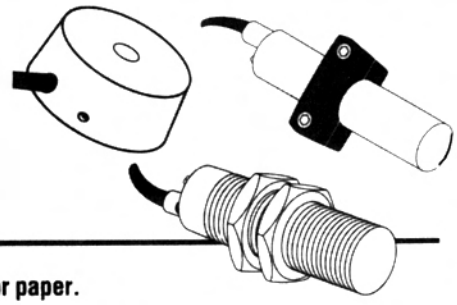
Capacitive Sensors | DC AC



For sensing metallic and non-metallic objects such as liquids, glass, plastic, powders or paper.

0-70mm (Unshielded) and 3-10mm (Shielded) Adjustable Sensing Ranges

Connector Type	Circuit Description	Housing Material	Shielded Model No.	Unshielded Model No.	Sensing Range	Maximum Load Current @ 140°F	Maximum Load Current @ 176°F	Leakage Current	Voltage Drop*	Maximum Switching Frequency	Short Circuit Protected
18mm Threaded Tubular 2-8mm Adjustable DC 10-30V											
6.6' Cable	3W, NPN, NO	Plastic	—	**ET710-33110**	2-8mm Adjustable	200mA	100mA	<10µA	<3 VDC	300Hz	yes
6.6' Cable	3W, PNP, NO	Plastic	—	**ET711-33110**	2-8mm Adjustable	200mA	100mA	<10µA	<3 VDC	300Hz	yes
18mm Threaded Tubular 2-8mm Adjustable AC 80-250V											
6.6' Cable	2W, AC, NO	Plastic	—	**ET720-33410**	2-8mm Adjustable	200mA	100mA	<2mA	<7 VAC	20Hz	no
30mm Threaded Tubular 3-10mm Adjustable DC 10-30V											
6.6' Cable	3W, NPN, NO	Metal	**ET710-42110**	—	3-10mm Adjustable	200mA	100mA	<10µA	<2.5 VDC	100Hz	yes
6.6' Cable	3W, PNP, NO	Metal	**ET711-42110**	—	3-10mm Adjustable	200mA	100mA	<10µA	<2.5 VDC	100Hz	yes
30mm Threaded Tubular 3-10mm Adjustable AC 80-250V											
6.6' Cable	2W, AC, NO	Metal	**ET720-42410**	—	3-10mm Adjustable	200mA	100mA	<2mA	<7 VAC	20Hz	no
30mm Threaded Tubular 5-15mm Adjustable DC 10-30V											
6.6' Cable	3W, NPN, NO	Metal	—	**ET710-43110**	5-15mm Adjustable	200mA	100mA	<10µA	<2.5 VDC	100Hz	yes
6.6' Cable	3W, PNP, NO	Metal	—	**ET711-43110**	5-15mm Adjustable	200mA	100mA	<10µA	<2.5 VDC	100Hz	yes
6.6' Cable	3W, NPN, NO	Plastic	—	**ET710-53110**	5-15mm Adjustable	200mA	100mA	<10µA	<2.5 VDC	100Hz	yes
6.6' Cable	3W, PNP, NO	Plastic	—	**ET711-53110**	5-15mm Adjustable	200mA	100mA	<10µA	<2.5 VDC	100Hz	yes
30mm Threaded Tubular 5-15mm Adjustable AC 80-250V											
6.6' Cable	2W, AC, NO	Metal	—	**ET720-43410**	5-15mm Adjustable	200mA	100mA	<2mA	<7 VAC	20Hz	no
6.6' Cable	2W, AC, NO	Plastic	—	**ET720-53410**	5-15mm Adjustable	200mA	100mA	<2mA	<7 VAC	20Hz	no
34mm Smooth Tubular 0-20mm Adjustable DC 10-30V											
6.6' Cable	3W, NPN, NO	Plastic	**ET710-82110**	**ET710-83110**	0-15mm(Shld) 0-20mm Adjustable	200mA	100mA	<10µA	<3 VDC	100Hz	yes
6.6' Cable	3W, PNP, NO	Plastic	—	**ET711-83110**	0-20mm Adjustable	200mA	100mA	<10µA	<3 VDC	100Hz	yes
34mm Smooth Tubular 0-20mm Adjustable AC 20-250V											
6.6' Cable	2W, AC, NO	Plastic	—	**ET720-83410**	0-20mm Adjustable	200mA	100mA	<2mA	<7 VAC	20Hz	no
Round Flat Pack 20-70mm Adjustable DC 10-30V											
6.6' Cable	3W, NPN, NO	Plastic	—	**ET710-93110**	20-70mm Adjustable	400mA	400mA	<10µA	<1.5 VDC	30Hz	yes
6.6' Cable	3W, PNP, NO	Plastic	—	**ET711-93110**	20-70mm Adjustable	400mA	400mA	<10µA	<1.5 VDC	30Hz	yes
Round Flat Pack 20-70mm Adjustable AC 80-250V											
6.6' Cable	2W, AC, NO	Plastic	—	**ET720-93410**	20-70mm Adjustable	400mA	400mA	<1mA	<12 VAC	8Hz	no

* Across conducting sensor

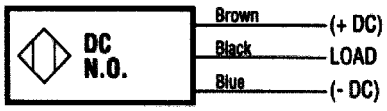
Common Sensor Characteristics

CAPACITIVE SENSORS	
Shielded Sensing Range	3-10mm
Unshielded Sensing Range	0-70mm
Standard Target (mm) (mild steel)	24x24x1 (2-8 Unshielded Range) 45x45x1 (3-10mm Shielded Range) 60x60x1 (0-20mm Unshielded Range) 210x210x1 (20-70mm Unshielded Range)
Repeatability	±5%
Hysteresis	3-20%
Temperature Drift (max.)	± 20%
Ambient Temperature Range	-13°F to +176°F (18mm & 34mm) -13°F to +140°F (30mm & Flat Pack)
Reverse Polarity Protected	yes
Current Consumption	18mm & 34mm DC: <7mA 30mm & 34mm AC: <2mA 30mm & Flat Pack DC: <10mA Flat Pack AC: <7mA
NEMA Enclosure Type Metal Plastic	 1, 12, 13 1, 3, 4, 4x, 6, 12, 13
LED Indicator	red = target
Metal Housings	Chrome Plated Brass
Plastic Housings	Ultradur®
Shipping Weight	18mm: 8 oz. 30mm: 10 oz. 34mm: 11 oz. Flat Pack: 5 lb. (Add 5 oz. for 6' Cable)

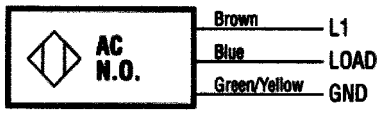
Circuit Drawings

CABLE MODELS

3 Wire DC N.O.



2 Wire AC N.O.



Dimensional Drawings

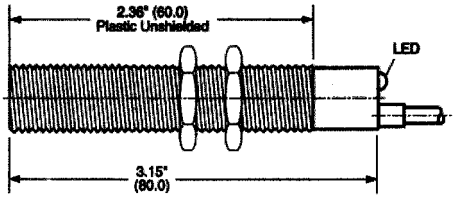
DC & AC

11

CONTROLS & SENSORS

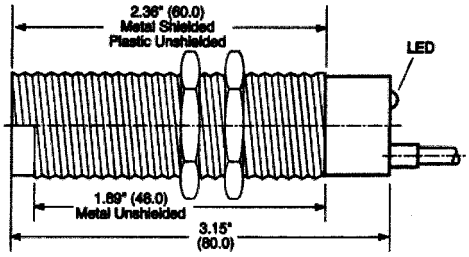
18mm MODELS

Body threads = M18x1

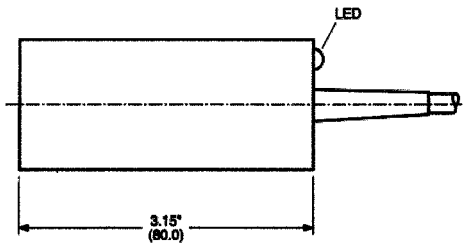


30mm MODELS

Body threads = M30x1.5



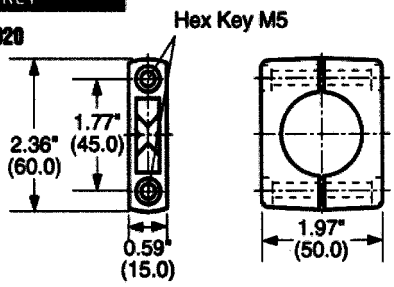
34mm MODELS



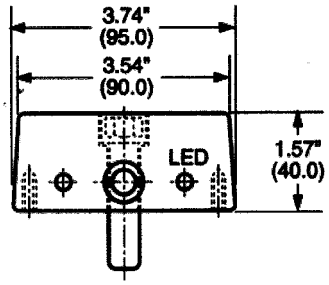
MOUNTING BRACKET

Part No. ET018-20020

Included with sensors



FLAT PACK MODELS



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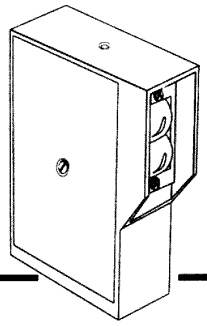


- **Non-Polarized**
- **Modulated LED**
- **Choice of Outputs**
- **Diecast Aluminum Housing Epoxy Coated**
- **Tri-Color LED Indicator**
- **Optional Plug-In Time Delays**
- **NEMA 3, 4, 12 & 13 Design**
- **-20°C to +70°C**

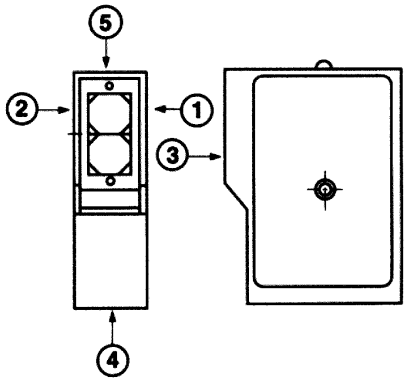
These beefed-up sensors are smart as well as tough. Die cast aluminum housings and totally sealed optics help make them ideal for severe environments. All models use a modulated infrared LED emitter and receiver to ignore ambient light. Plug-in time delay modules offer wide flexibility in application options.

Designed for harsh industrial environments, the EP100 Series is especially equipped to alert you to potential problems. When other sensors run into alignment or dirty optic problems, you don't know about it until they fail. The EP100 uses a unique "tri-color" LED to indicate impending problems. When the LED glows:

- Green — stable operation *>70% reflected signal strength*
- Yellow — marginal operation *40-70% reflected signal strength*
- Red — insufficient reflected signal

Target Repeatability

For best repeatability, it is recommended to have target travel in direction (1) or (2). Traveling toward lens (3) will result in slightly higher tolerance on switch point. It is not recommended to have target travel in direction (4) and (5).



Supply Voltage	Power Consumption	Output Circuit Type	Model No.	Output Rating	Response Time On/Off	Maximum Switching Frequency	Leakage Current
RELAY OUTPUTS							
120 VAC	1.0 VA	DPDT	**EP110-12001***	5A Resistive @ 250 VAC or 30 VDC	15mS/20ms	25 Hz	—
11-30 VDC	70 mA	DPDT	**EP110-15001**	5A Resistive @ 250 VAC or 30 VDC	15mS/20ms	25 Hz	—
TRANSISTOR OUTPUTS							
120 VAC	1.0 VA	NPN	**EP110-12201***	25 mA @ 40 VDC	2mS/2ms	250 Hz	—
11-30 VDC	70 mA	NPN	**EP110-15201**	25 mA @ 40 VDC	2mS/2ms	250 Hz	—
TRIAC OUTPUTS							
120 VAC	1.0 VA	SPST	**EP110-12901***	0.05-1.5 A @ 90-240 VAC	4mS/40ms	20 Hz	5.0 mA
11-30 VDC	70 mA	SPST	**EP110-15901**	0.05-1.5 A @ 90-240 VAC	4mS/40ms	20 Hz	5.0 mA

* UL Listed and CSA Approved

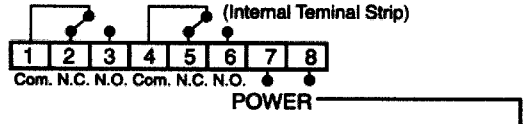
Common Sensor Characteristics

RETROREFLECTIVE HEAVY DUTY SENSORS	
Sensing Range	0-30 ft.*
Standard Retroreflector Target	4" x 4" square reflector
Lens	Glass
Light Source	Modulated Infrared LED
Light/Dark Operate — Selectable	yes
Optional Plug-in Timers**	yes
NEMA Enclosure Types	3, 4, 12 & 13
Temperature Range	-20°C to +70°C
UL/CSA Certifications	yes***
Sensitivity Adjustment	yes
Optic Heater	no
Cable Entry	1/2" - 14 NPT Conduit
Shipping Weight	18 oz.

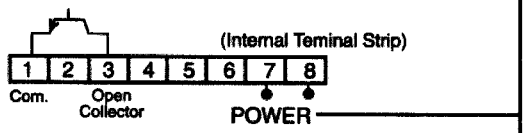
* Using EP175-13900, 4" x4" square reflector

Circuit Drawings

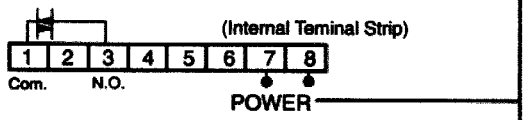
RELAY (DPDT) OUTPUTS

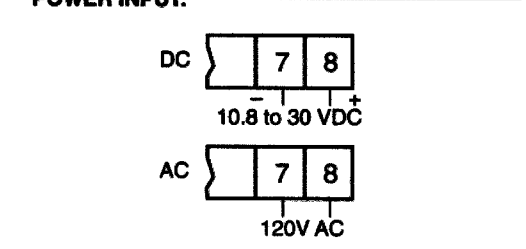


TRANSISTOR (NPN) OUTPUTS



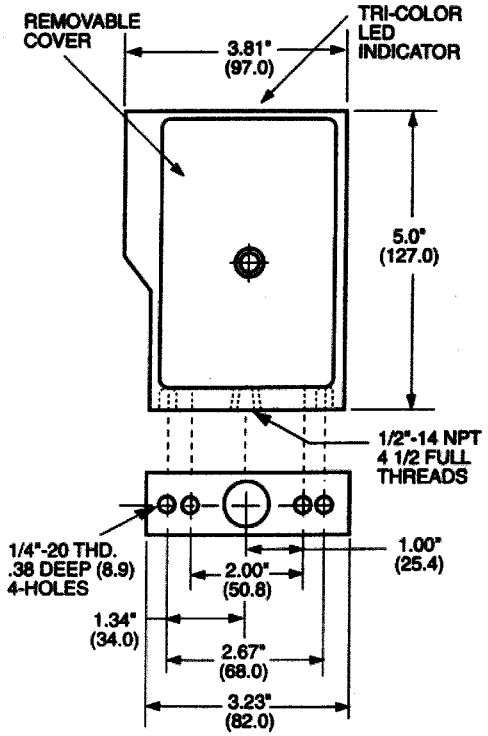
TRIAC OUTPUTS



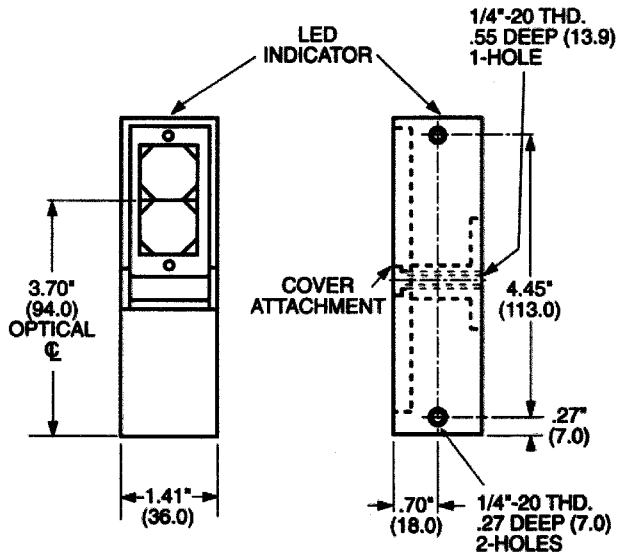


Dimensional Drawings

SIDE & BOTTOM VIEW



FRONT & REAR VIEW



11 CONTROLS & SENSORS

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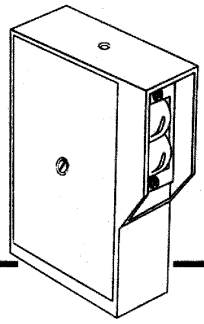


- **Modulated LED**
- **Choice of Outputs**
- **Diecast Aluminum Housing Epoxy Coated**
- **Tri-Color LED Indicator**
- **Optional Plug-In Time Delays**
- **NEMA 3, 4, 12 & 13 Design**
- **-20°C to +70°C**

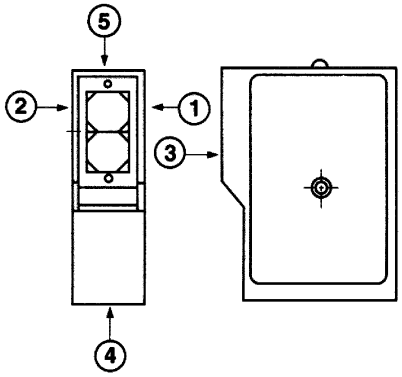
These beefed-up sensors are smart as well as tough. Die cast aluminum housings and totally sealed optics help make them ideal for severe environments. All models use a modulated infrared LED emitter and receiver to ignore ambient light. Plug-in time delay modules offer wide flexibility in application options.

Designed for harsh industrial environments, the EP100 Series is especially equipped to alert you to potential problems. When other sensors run into alignment or dirty optic problems, you don't know about it until they fail. The EP100 uses a unique "tri-color" LED to indicate impending problems. When the LED glows:

- Green — stable operation *>70% reflected signal strength*
- Yellow — marginal operation *40-70% reflected signal strength*
- Red — insufficient reflected signal

Target Repeatability

For best repeatability, it is recommended to have target travel in direction (1) or (2). Traveling toward lens (3) will result in slightly higher tolerance on switch point. It is not recommended to have target travel in direction (4) and (5).



Supply Voltage	Power Consumption	Output Circuit Type	Fixed Range 1.0'	Fixed Range 2.5'	Fixed Range 6.5'	Adjustable Range	Output Rating	Response Time	Maximum Switching Frequency	Leakage Current
RELAY OUTPUTS										
120 VAC	1.0 VA	DPDT	**EP130-12003***	**EP130-12002***	**EP130-12001***	—	5A Resistive @ 250 VAC or 30 VDC	20mS/25ms	25 Hz	—
11-30 VDC	70 mA	DPDT	**EP130-15003**	**EP130-15002**	**EP130-15001**	—	5A Resistive @ 250 VAC or 30 VDC	20mS/25ms	25 Hz	—
110/220 VAC	4.0 VA	SPDT	—	—	—	**EP130-12004**	50 W - 250 VDC 60 VA - 250 VAC	70mS	7 Hz	—
11-30 VDC ± 10%	90 mA	SPDT	—	—	—	**EP130-15004**	50 W-250 VDC 60 VA - 250 VAC	70mS	7 Hz	—
TRANSISTOR OUTPUTS										
120 VAC	1.0 VA	NPN	**EP130-12203***	**EP130-12202***	**EP130-12201***	—	25 mA @ 40 VDC	60mS/10ms	60 Hz	—
11-30 VDC	70 mA	NPN	**EP130-15203**	**EP130-15202**	**EP130-15201**	—	25 mA @ 40 VDC	60mS/10ms	60 Hz	—
11-30 VDC ± 10%	90 mA	PNP	—	—	—	**EP130-15004**	100mA	70mS	7 Hz	—
TRIAC OUTPUTS										
120 VAC	1.0 VA	SPST	**EP130-12903***	**EP130-12902***	**EP130-12901***	—	.05-1.5 A @ 90-240 VAC	6mS/40ms	20 Hz	5mA
11-30 VDC	70 mA	SPST	**EP130-15903**	**EP130-15902**	**EP130-15901**	—	.05-1.5 A @ 90-240 VAC	6mS/40ms	20 Hz	5mA

* UL Listed and CSA Approved

Common Sensor Characteristics

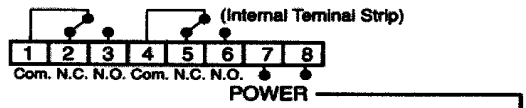
DIFFUSE PROXIMITY — HEAVY DUTY SENSING

	Fixed Range	Adjustable Range
Sensing Ranges	1.0, 2.5, 6.5 ft.*	100-800 mm Adjustable*
Standard Target	White Bond Paper	
Lens	Glass	
Light Source	Modulated Infrared LED	
Light/Dark Operate — Selectable	yes	
Optional Plug-in Timers**	yes	
NEMA Enclosure Type	3, 4, 12 & 13	
Temperature Range	-20°C to +70°C	-20°C to +60°C
UL/CSA Certifications	yes***	
Sensitivity Adjustment	yes	
Optic Heater	no	
Cable Entry	1/2" - 14 NPT Conduit	
Shipping Weight	16 oz.	18 oz.

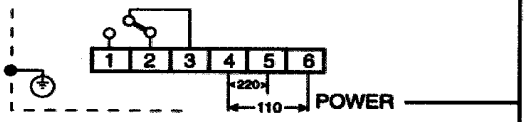
*Using White Bond Paper

Circuit Drawings

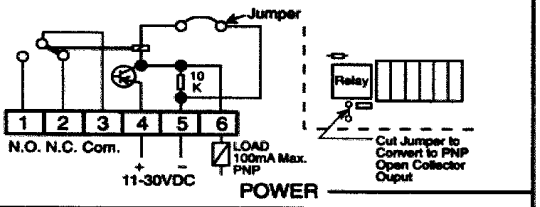
RELAY (DPDT) OUTPUTS



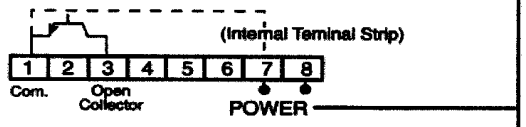
AC OUTPUTS ADJUSTABLE RANGE (SPDT) AC POWER



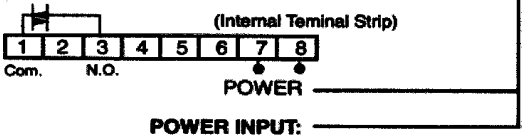
DC OUTPUTS ADJUSTABLE RANGE (SPDT PNP) DC POWER

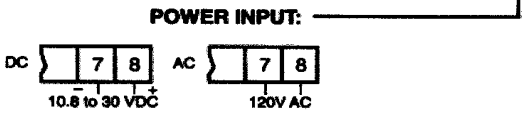


TRANSISTOR (NPN) OUTPUTS



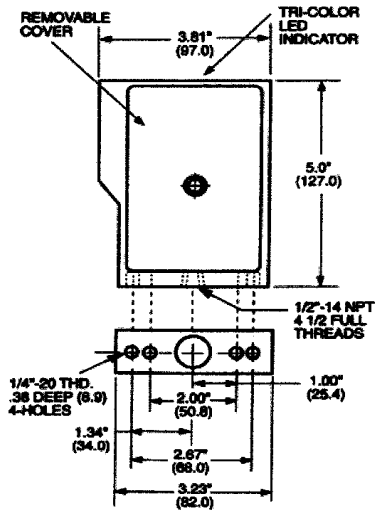
TRIAC OUTPUTS



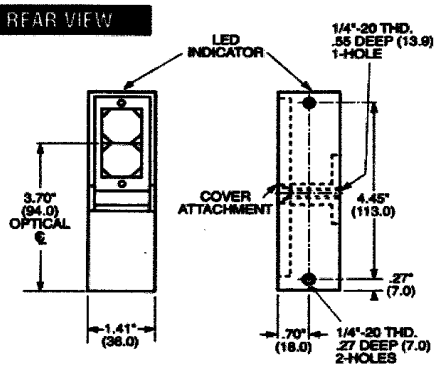


Dimensional Drawings

SIDE & BOTTOM VIEW



FRONT & REAR VIEW



Tolerance vs. Range

For Adjusted Range Diffuse Scanner EP130-12004 & EP130-15004

Adjusted Range	Total Sensing Range From:	Max. Range at which Target Does Range is Set On Both Targets	
		Black Paper	White Paper
3.94" (100mm)	1.97" to 3.94" (50mm to 100mm)	3.94" (100mm)	4.02" (102mm)
11.80" (300mm)	3.94" to 11.80" (100mm to 300mm)	11.80" (300mm)	12.20" (310mm)
19.68" (500mm)	4.72" to 19.68" (120mm to 500mm)	19.68" (500mm)	21.26" (540mm)
31.50" (800mm)	5.90" to 31.50" (150mm to 800mm)	31.50" (800mm)	31.50" (800mm)

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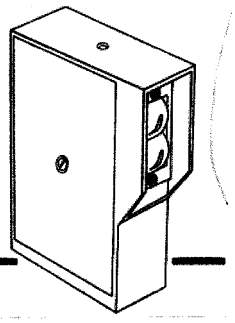

- **Modulated LED**
- **Choice of Outputs**
- **Diecast Aluminum Housing Epoxy Coated**
- **Tri-Color LED Indicator**
- **Optional Plug-In Time Delays**
- **400 Ft. Range Thru-Beam**
- **Sealed Heated Optics Thru-Beam**
- **NEMA 3, 4, 12 & 13 Design**
- **-20°C to +70°C**

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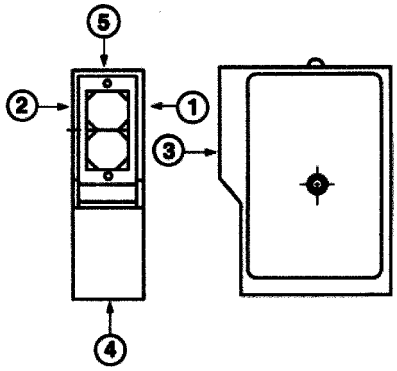


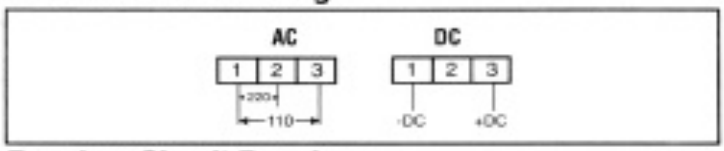
Supply Voltage	Power Consumption	Output Circuit Type	Thru-Beam Emitter	Thru-Beam Receiver	Fiber Optic	Output Rating	Response Time On/Off	Maximum Switching Frequency	Leakage Current
110/220 VAC	3.5 VA	—	EP120-12501	—	—	—	—	—	—
24 VDC ± 10%	35 mA	—	EP120-15501	—	—	—	—	—	—
RELAY OUTPUTS									
120 VAC	1.0 VA	DPDT	—	—	EP140-12001	5A Resistive @ 250 VAC or 30 VDC	20mS/25ms	25 Hz	—
110/220 VAC	4.5 VA	SPDT	—	EP120-12701	—	50W - 250 VDC 60 VA - 250 VAC	30mS/150ms	6 Hz	—
11-30 VDC	70 mA	DPDT	—	—	EP140-15001	5A Resistive @ 250 VAC or 30 VDC	20mS/25ms	20 Hz	—
24 VDC ± 10%	100 mA	SPDT**	—	EP120-15701	—	50W - 250 VDC 60 VA - 250 VAC	—	20 Hz	—
TRANSISTOR OUTPUTS									
11-30 VDC	70 mA	NPN	—	—	EP140-15201	25 mA @ 40 VDC	6mS/10ms	60 Hz	—
24 VDC ± 10%	100 mA	PNP**	—	EP120-15701	—	100 mA	—	100 Hz	—
TRIAC OUTPUTS									
120 VAC	1.0 VA	SPST	—	—	EP140-12001*	.05-1.5 A @ 90-240 VAC	6mS/40ms	20 Hz	5mA
11-30 VDC	70 mA	SPST	—	—	EP140-15901	.05-1.5 A @ 90-240 VAC	6mS/40ms	20 Hz	5mA

Common Sensor Characteristics

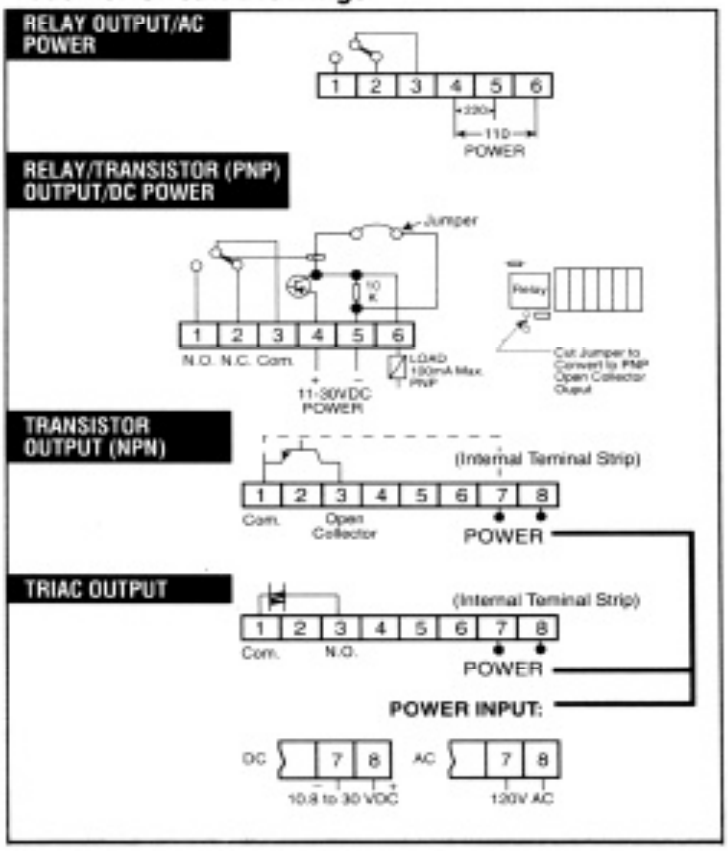
THRU-BEAM & FIBER OPTIC HEAVY DUTY SENSORS		
	Thru-Beam	Fiber Optic
Sensing Range	0-400 ft.	See EP181 – Fiber Optic Chart
Lens	Glass	
Light Source	Modulated Infrared LED	
Light/Dark Operate — Selectable	no	yes
Optional Plug-in Timers*	yes	
NEMA Enclosure Type	3, 4, 12 & 13	
Temperature Range	-30°C to +60°C	-20°C to +70°C
U.L./CSA Certifications	no	yes**
Sensitivity Adjustment	no	yes
Optic Heater	yes	no
Cable Entry	1/2" - 14 NPT Conduit	
Shipping Weight	18 oz.	20 oz.

* Refer to Accessories
** See chart

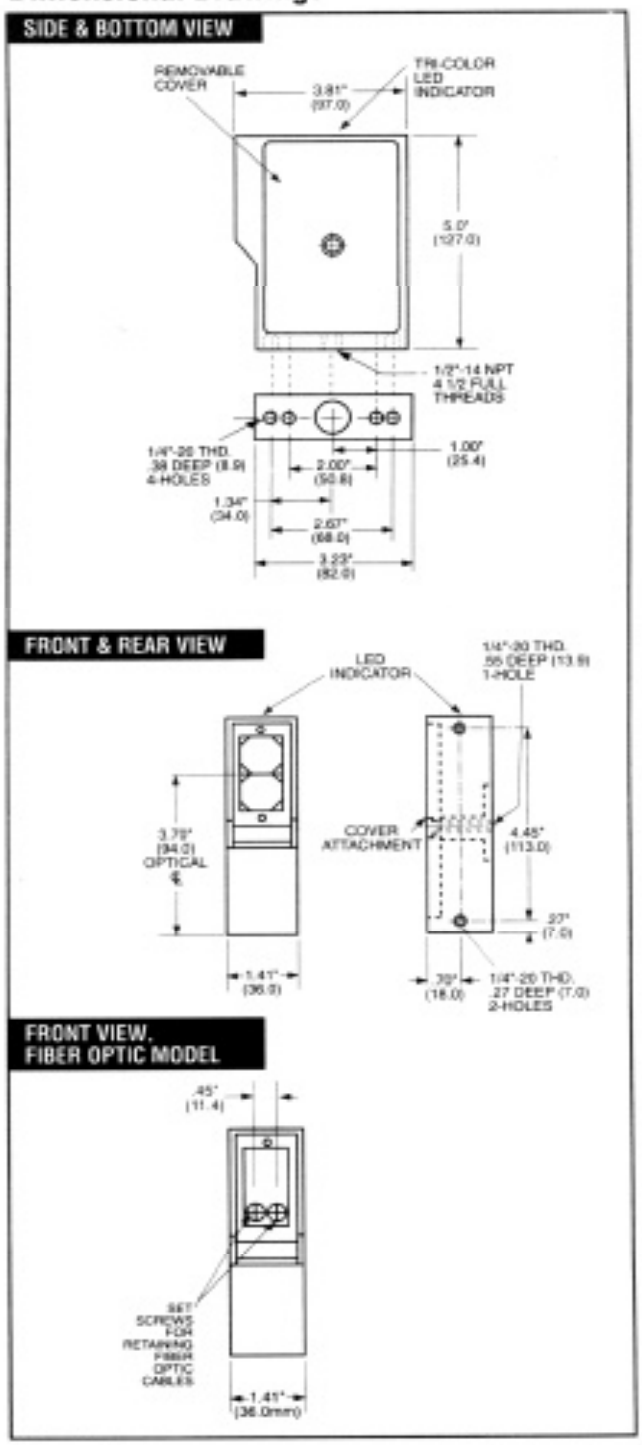
Emitter Circuit Drawings



Receiver Circuit Drawings



Dimensional Drawings



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