

- Weld Field and Electrical Noise Immunity
- Standard Latching Short Circuit Protection (SCP), Non-Latching SCP Available for DC Models Only
- Predictable, Consistent Electrical Performance
- 100% Tested and Burned-in

These sensors are specifically designed for extreme duty use in harsh applications such as automotive fabrication and assembly plants. Our Extended Range sensors have been designed primarily for use as part present sensors for sheet metal operations, or other applications where target to sensor relationship cannot be guaranteed during operation. For the 25mm range unit, a special cover is available to protect the thermoset housing from damage caused by extreme weld expulsion.

Connector Type	Circuit Description	Housing Material	Housing Dimensions	Model No. (Unshielded)	Maximum Load Current	Leakage Current	Voltage Drop*	Maximum Switching Frequency	Short Circuit Protected
25mm SENSING RANGE DC 10-30V									
4-pin Euro	3W, PNP, NO	Thermoset	74x50x41mm	EE510-83441	200mA	10µA	2.0V @ 100mA	16Hz	Latching
4-pin Euro	3W, PNP, NO	Thermoset	74x50x41mm	EE510-83041	200mA	10µA	2.0V @ 100mA	16Hz	Non-Latching
4-pin Mini	3W, PNP, NO	Thermoset	74x50x41mm	EE510-83401	200mA	10µA	2.0V @ 100mA	16Hz	Latching
4-pin Mini	3W, PNP, NO	Thermoset	74x50x41mm	EE510-83001	200mA	10µA	2.0V @ 100mA	16Hz	Non-Latching
8' Cable	3W, PNP, NO	Thermoset	74x50x41mm	EE510-83411	200mA	10µA	2.0V @ 100mA	16Hz	Latching
8' Cable	3W, PNP, NO	Thermoset	74x50x41mm	EE510-83011	200mA	10µA	2.0V @ 100mA	16Hz	Non-Latching
25mm SENSING RANGE AC/DC 20-230V									
3-pin Micro	2W, NO, LL	Thermoset	74x50x41mm	EE530-83421	500mA	1.7mA	<10V	16Hz	Latching
3-pin Micro	2W, NO, HL	Thermoset	74x50x41mm	EE560-83421	500mA	4.5mA	<10V	16Hz	Latching
3-pin Mini	2W, NO, LL	Thermoset	74x50x41mm	EE530-83401	500mA	1.7mA	<10V	16Hz	Latching
3-pin Mini	2W, NO, HL	Thermoset	74x50x41mm	EE560-83401	500mA	4.5mA	<10V	16Hz	Latching
8' Cable	2W, NO, HL	Thermoset	74x50x41mm	EE560-83411	500mA	4.5mA	<10V	16Hz	Latching
50mm SENSING RANGE DC 10-30V									
4-pin Euro	3W, PNP, NO	Thermoplastic	117x101x50mm	EE510-84440	200mA	10µA	2.0V @ 100mA	16Hz	Latching
4-pin Euro	3W, PNP, NO	Thermoplastic	117x101x50mm	EE510-84040	200mA	10µA	2.0V @ 100mA	16Hz	Non-Latching
4-pin Mini	3W, PNP, NO	Thermoplastic	117x101x50mm	EE510-84400	200mA	10µA	2.0V @ 100mA	16Hz	Latching
4-pin Mini	3W, PNP, NO	Thermoplastic	117x101x50mm	EE510-84000	200mA	10µA	2.0V @ 100mA	16Hz	Non-Latching
8' Cable	3W, PNP, NO	Thermoplastic	117x101x50mm	EE510-84010	200mA	10µA	2.0V @ 100mA	16Hz	Non-Latching
50mm SENSING RANGE AC/DC 20-230V									
3-pin Micro	2W, NO, LL	Thermoplastic	117x101x50mm	EE530-84420	500mA	1.7mA	<10V	16Hz	Latching
3-pin Micro	2W, NO, HL	Thermoplastic	117x101x50mm	EE560-84420	500mA	4.5mA	<10V	16Hz	Latching
3-pin Mini	2W, NO, LL	Thermoplastic	117x101x50mm	EE530-84400	500mA	1.7mA	<10V	16Hz	Latching
3-pin Mini	2W, NO, HL	Thermoplastic	117x101x50mm	EE560-84400	500mA	4.5mA	<10V	16Hz	Latching
8' Cable	2W, NO, HL	Thermoplastic	117x101x50mm	EE560-84410	500mA	4.5mA	<10V	16Hz	Latching

* Across conducting sensor

- ▶ "LL" indicates *Low Leakage* and "HL" indicates *High Leakage*.
- ▶ Consult factory for normally closed model availability.

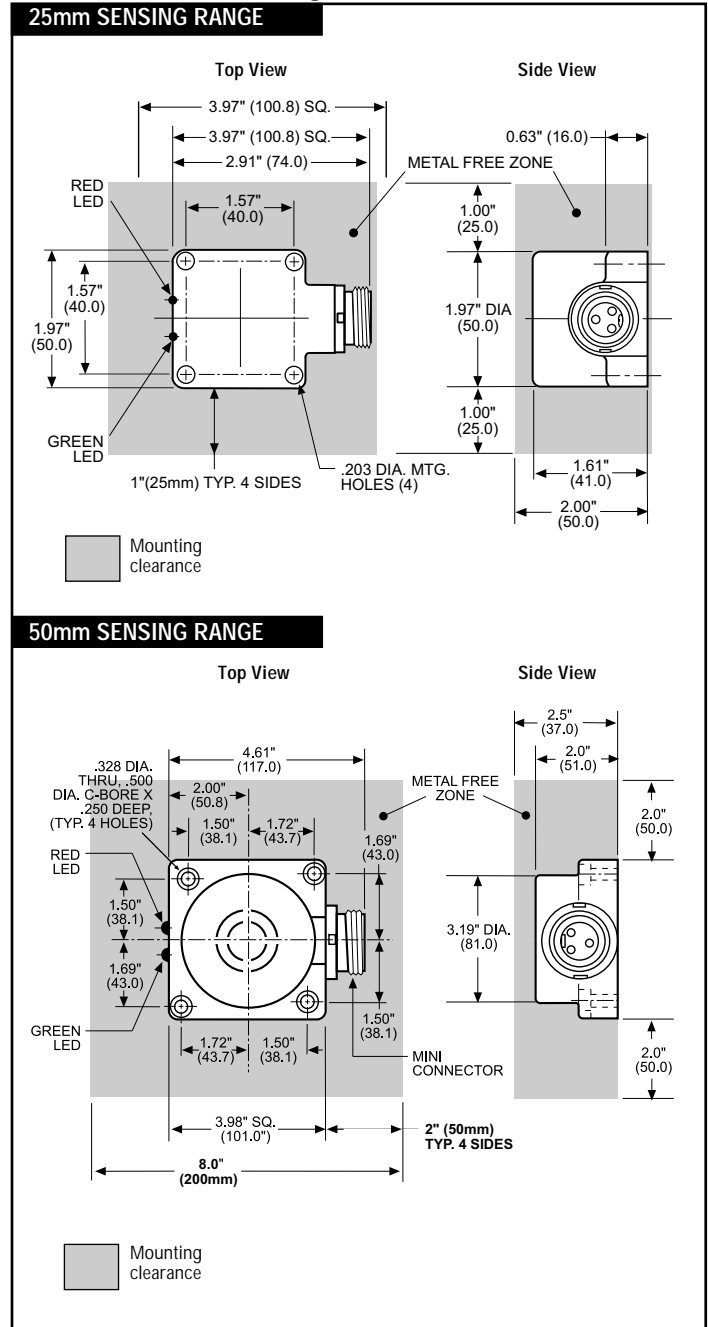


Common Sensor Characteristics

EXTENDED RANGE SENSORS		
	2W AC/DC	3W DC
Nominal Sensing Range ($\pm 10\%$)	25mm & 50mm	
Current Consumption	N/A	10mA
Short Circuit Protection	yes	
Reverse Polarity Protected	yes	
Temperature Drift (Max.)	$\pm 10\%$	
Ambient Temperature Range	25mm: -4°F to +158°F 50mm: -4°F to +122°F	
Cable Type	PVC	
Hysteresis	3-10%	
Repeatability	$< \pm 1\%$	
LED Indicator	red = power green = target	grn = power amber = target
Shipping Weight	25mm	50mm
Connector model:	10 oz.	2 lb.
Cable model:	15 oz.	2 lb. 5 oz.

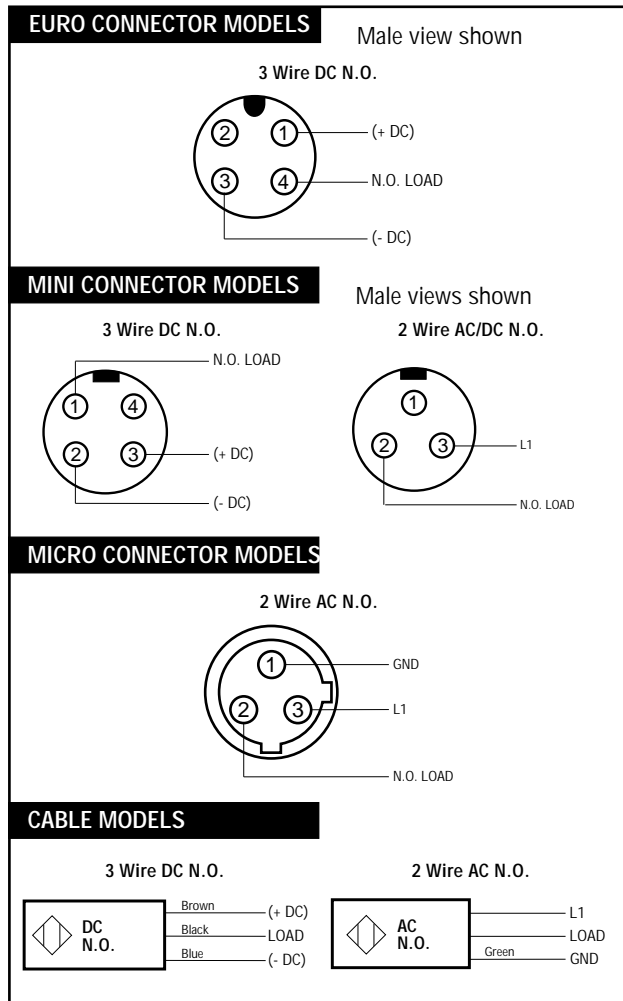
* See Proximity Reference Information Section for details on mounting clearances for extended range sensors.

Dimensional Drawings



Proximity Sensors

Circuit Drawings



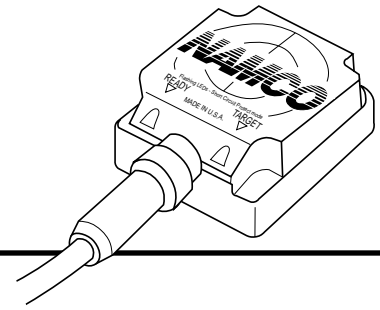
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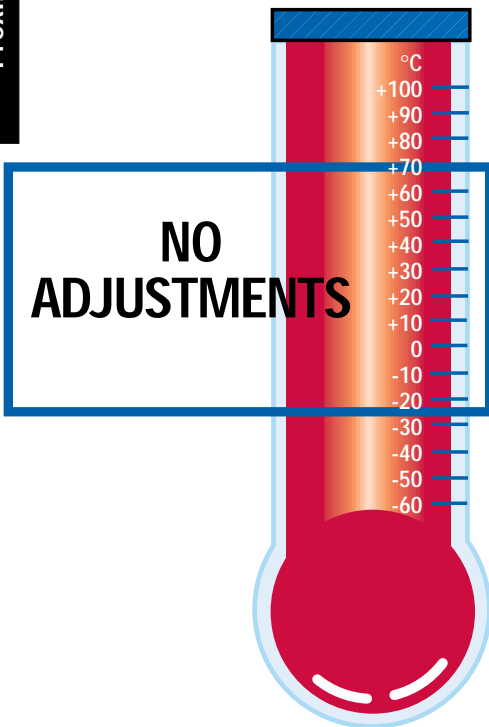
Weld
Field
Immune

Focused Field Long Range Sensors



Proximity Sensors

Focused Field FlatPak™ Sensor: Range Stable to 70°C, Never Needs Range Adjustments



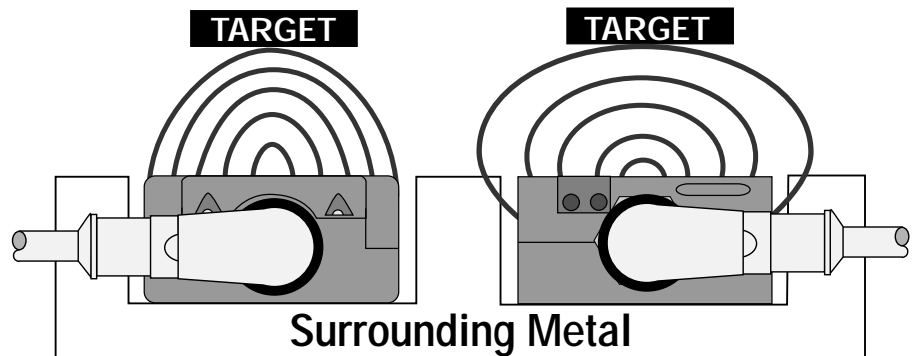
The Namco Focused Field FlatPak™ Proximity Sensor is a Super Heavy Duty, completely encapsulated sensor designed to sense large metal objects at long ranges. It is the first sensor of this body style to offer a focused sensing field.

The focused sensing field allows this sensor to be mounted flush with surrounding metal with only a .25 inch gap between the sensor and the metal surface. This sensor will operate reliably in this setting without sensing range adjustments all year round regardless of changes in ambient temperature.

Competitive sensors have traditionally included a trim pot to enable the user to revise the sensing distance when ambient conditions changed. These sensors were susceptible to substantial growth in sensing range when ambient temperature changed from season to season. They would eventually "lock on" to surrounding metal due to this growth in range and to the un-focused nature of their sensing fields. Only a .25 inch clearance is necessary to insure that the Focused Field FlatPak will never lock on to surrounding metal.

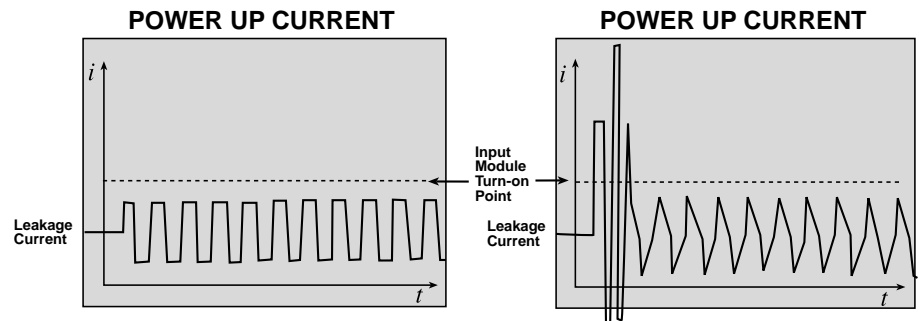
No TRANSIENTS at Power-Up

The Namco FlatPak sensor has the most noise resistant circuitry in the business, **Namco's patented Weld Field Immune (WFI) circuitry**. Not only will the sensor operate reliably in the presence of 20,000 amp weld fields, it also powers-up glitch-free and is extremely resistant to radio frequency interference and other forms of electrical noise. Problems such as "false detection" and "dropping out" are non-existent, further minimizing programming and maintenance requirements.



Namco FlatPak

Other Extended Range Sensors



Namco Focused Field FlatPak Sensor. A clean wave means predictable performance.

Power-up current draw of competitive sensor will turn on PLC inputs.

An Easy Upgrade... Directly Replaces Other Extended Range Sensors

The Namco Focused Field FlatPak™ Sensor is designed to directly replace existing sensors of this format. It mounts on 65mm bolt centers and is the only sensor of this type that is made in the USA. It comes with a Lifetime Free Replacement Warranty.



Assists in Troubleshooting

Namco's WFI circuit includes latching Short Circuit Protection (SCP). If the sensor detects excessive current, it reverts to a sleep state with LEDs alternately flashing. This provides a clear indication of a problem in the circuit, simplifying the troubleshooting task. The sensor draws minimal current (2mA) and can remain in this state indefinitely.

No sensing range adjustments, ever.

Namco Weld Field Immune circuitry is designed to operate in presence of resistance welding electrodes carrying 20,000 Amperes RMS (45,000 Amperes peak).

Weld-splatter resistant housing.

Super Reliable—Covered by Namco Lifetime Replacement Program.

Built-in connector available.

Available with either 40mm or 50mm sensing range.

Namco's patented latching short circuit protection is very fast acting. Prolonged shorts will not damage electronics; latching feature aids in the diagnosis of troublesome intermittent faults.

Available in either 20-150 VAC/DC or 10-30 VDC styles.

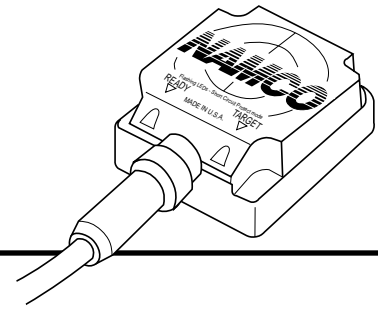
Only extended range sensor made in the USA.



You can mount flush with metal floors or within metal channel.

**Weld
Field
Immune**

Focused Field Long Range Sensors



Proximity Sensors

- 40mm or 50mm Sensing Range
- “No Adjustment” Sensor
- Flush Mountable - Focused Field Will not Lock on Surrounding Metal
- Easy Upgrade/Direct Replacement
- Sensing Range - Stable From -25°C to 70°C
- Namco Weld Field Immune Circuit
- Clean PowerUp - No Turn-on Transients
- Latching SCP - Simplifies Troubleshooting
- Super Reliable, Fully Epoxy-Encapsulated: Covered by Lifetime Free Replacement Program
- **ONLY SENSOR OF ITS TYPE MADE IN USA**



The NAMCO Focused Field FlatPak™ Proximity Sensor is a Super Heavy Duty, completely encapsulated sensor designed to sense large metal objects at long ranges in tough environments. It is the first sensor of this body style to offer a focused sensing field.

Competitive sensors have traditionally included a trim pot to enable the user to revise the sensing distance when ambient conditions change. These sensors are susceptible to substantial growth in sensing range when ambient temperatures change from season to season. They eventually “lock on” to surrounding metal due to this growth in range and to the unfocused nature of their sensing fields.

The Namco Focused Field FlatPak™ Sensor has two advantages over competitive products that eliminate the need for constant adjustment. **In fact, there are no sensitivity adjustments to be made, ever!!!**

The first advantage is the focused field. The shape of this field minimizes sensing of surrounding metal. When mounted in an identical setting to the competitive switch, it’s sensing range changes less than 10%, and the shape of the field stays focused forward of the switch.

The second advantage is exceptional stability over temperature. The Namco FlatPak’s range will increase a maximum of 10% even at the maximum ambient tempera-

ture, and the shape of the field will continue in a non-side-sensing focused field.

The Namco Focused Field FlatPak™ proximity sensor requires only a .25 inch clearance to surrounding metal. Once installed with this clearance, the sensor will never lock on to surrounding metal.

This Namco FlatPak also includes the most noise resistant circuitry in the business, Namco’s patented Weld Field Immune (WFI) circuitry. Not only will the sensor operate reliably in the presence of 20,000 amp weld fields, it also powers up glitch-free and is extremely resistant to radio frequency interference and other forms of electrical noise. Problems such as “false detection” and “dropping out” are non-existent, further minimizing programming and maintenance requirements.

Namco’s WFI circuit includes latching Short Circuit Protection (SCP). If the sensor detects excessive current, it reverts to a sleep state with LEDs flashing. This provides a clear indication of a problem in the circuit, simplifying the troubleshooting task. The sensor draws minimal current (2 mA) and can remain in this state indefinitely.

The Namco Focused Field FlatPak™ Sensor is designed to directly replace existing sensors of this format. It mounts on 65mm bolt centers and is **the only sensor of this type that is Made in the USA**. It comes with a Lifetime Free Replacement Warranty.

Connector Type	Circuit Description	Housing Material	Housing Dimensions	Model No.	Maximum Load Current	Leakage Current	Voltage Drop*	Maximum Switching Frequency	Short Circuit Protected
40mm SENSING RANGE DC 10-30V									
4-pin Euro	3W, PNP, NO	Fortron	79x92x40mm	EE510-86440	200mA	<10µA	<2.5V @ 200mA	15Hz	Latching
4-pin Euro	3W, PNP, NO	Fortron	79x92x40mm	EE510-86040	200mA	<10µA	<2.5V @ 200mA	15Hz	Non-latching
4-pin Mini	3W, PNP, NO	Fortron	79x92x40mm	EE510-86400	200mA	<10µA	<2.5V @ 200mA	15Hz	Latching
4-pin Mini	3W, PNP, NO	Fortron	79x92x40mm	EE510-86000	200mA	<10µA	<2.5V @ 200mA	15Hz	Non-latching
40mm SENSING RANGE AC/DC 20-150V									
3-pin Micro	2W, NO	Fortron	79x92x40mm	EE530-86420	200mA	1.7mA	≤10V	15Hz	Latching
3-pin Mini	2W, NO	Fortron	79x92x40mm	EE530-86400	200mA	1.7mA	≤10V	15Hz	Latching
50mm SENSING RANGE DC 10-30V									
4-pin Euro	3W, PNP, NO	Fortron	79x92x40mm	EE510-88440	200mA	<10µA	<2.5V @ 200mA	15Hz	Latching
4-pin Euro	3W, PNP, NO	Fortron	79x92x40mm	EE510-88040	200mA	<10µA	<2.5V @ 200mA	15Hz	Non-latching
4-pin Mini	3W, PNP, NO	Fortron	79x92x40mm	EE510-88400	200mA	<10µA	<2.5V @ 200mA	15Hz	Latching
4-pin Mini	3W, PNP, NO	Fortron	79x92x40mm	EE510-88000	200mA	<10µA	<2.5V @ 200mA	15Hz	Non-latching
50mm SENSING RANGE AC/DC 20-150V									
3-pin Micro	2W, NO	Fortron	79x92x40mm	EE530-88420	200mA	1.7mA	≤10V	15Hz	Latching
3-pin Mini	2W, NO	Fortron	79x92x40mm	EE530-88400	200mA	1.7mA	≤10V	15Hz	Latching

Note: For Minimum-On-Delay* versions of any of the part numbers above - Replace the “0” at the end of the part number with a “5”.

(i.e.: EE510-86445 is the Minimum-On-Delay version of the EE510-86440).

* Minimum-On-Delay provides an output “On” for a minimum 0.5 sec., no matter how short a period the target is present.

Common Sensor Characteristics

FLATPAK PROXIMITY SENSORS		
Supply Voltage	10-30V DC	20-150V AC/DC
Voltage Drop	$\leq 2.5V @ 200mA$	$\leq 10V$
	$\leq 2.0V @ \leq 100mA$	
Max. Load Current @ 25°C	200mA	
Inrush Current (rms 1Hz)	-	1.5A
Leakage Current	10 μ A	1.7mA
Sensing Range	40mm/50mm	
Response Time	30ms	
Power-up Time	70ms	
Max. Switching Frequency	15Hz	
Ambient Temp. Range	-25°C to 70°C (-13°F to 158°F)	

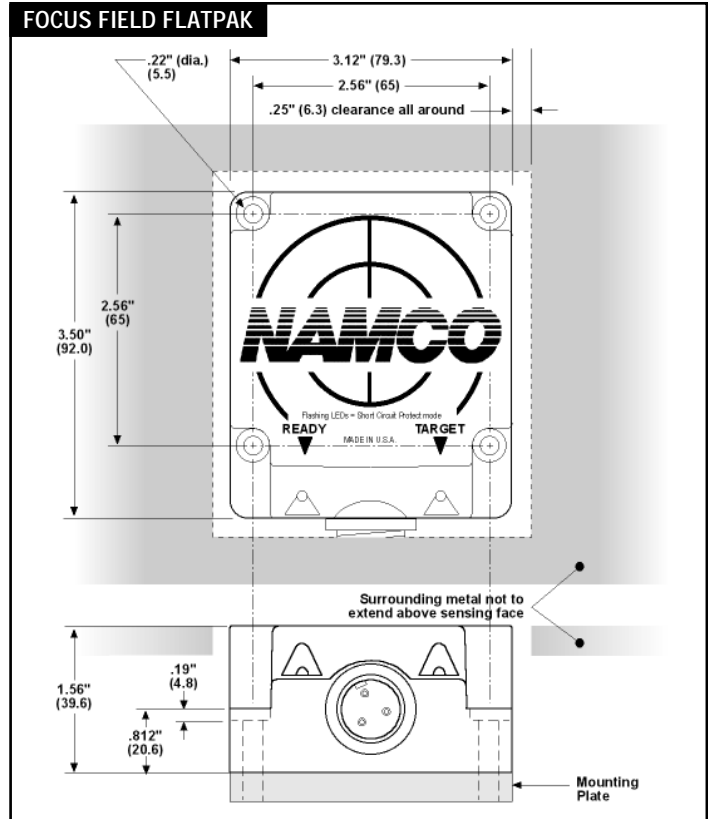
LED Functions

	10-30V DC		20-150V AC/DC	
	Green	Amber	Red	Green
Power Off	Off	Off	Off	Off
Power On Load De-energized	On	Off	On	Off
Power On Load Energized	On	On	Off	On
*SCP Mode Activated	Flashing		Flashing	

*Short Circuit Protection: If the sensor is shorted, the sensor's Short Circuit Protection (SCP) will be activated. When this occurs, both LEDs will flash and the sensor will limit current flow to about 2.0mA.

Dimensional Drawings

EE500

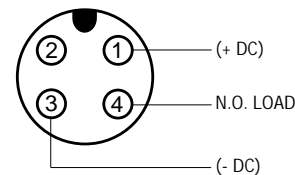


Proximity Sensors

Circuit Drawings

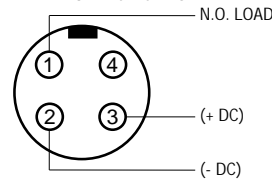
EURO CONNECTOR MODELS

3 Wire DC N.O.

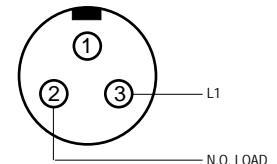


MINI CONNECTOR MODELS

3 Wire DC N.O.

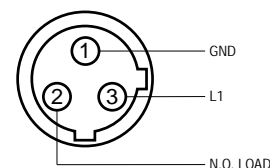


2 Wire AC/DC N.O.



MICRO CONNECTOR MODELS

2 Wire AC N.O.



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