

# MODULOC *Control Systems*



## SERIES 2000 LONG RANGE INDUCTIVE PROXIMITY SENSORS



- **Extended Ranges from 20 mm to 200 mm.**
- **Available in a variety of shapes and sizes to fit all of your applications.**
- **Rectangular units available in lengths up to 1200 mm.**
- **Non-Flush, Flush and Semi-Flush Mounting Styles. Can be embedded directly in steel framework.**
- **Built for harsh environments.**
- **Fully Encapsulated ABS & Marine Glass Fiber Cases - IP66 Rating.**
- **Self-contained or remote sensors.**

### Features

- Base mount or embedded into steel framework.
- Sensor lengths according to requirements with nominal ranges up to 200 mm.
- Robust encapsulated watertight design.
- DC sensors available in 2-wire or 3-wire (NPN or PNP) configurations.
- AC sensors available in 2-wire or 3-wire configurations.
- Dual LED indication.
- Fully adjustable sensitivity.
- Short circuit protection.

### Product Family

- **NON-FLUSH 2100 SERIES**
- **FLUSH 2200 SERIES**
- **SEMI-FLUSH 2300 SERIES**
- **FLAT PACK 2400, 2500 & 2600 SERIES**

### Mounting Style/Detection Range

- For mounting onto steel. Nominal ranges of 50, 75 and 130 mm.
- For mounting embedded into steel. Nominal ranges of 20, 55 and 110 mm.
- For mounting in surrounding steel framework. Nominal ranges of 80 and 120 mm.
- Semi-flush for mounting in surrounding steel framework. Nominal ranges of 120, 140 and 200 mm. Available in lengths from 300 - 1200 mm.

### Typical Applications

- Mill & Process Control** Tracking the position of bar, pipe, tube or structural shapes in a rolling mill or process line.
- Material Handling** Replacing limit switches on automated machinery

### Product Description

The Series 2000 Inductive Proximity Sensors are built specifically for installation in the harshest of industrial environments. They are ideal for mounting flush or slightly below the floor-pan of roller tables and other conveyor systems.

The combination of large sensing distances with base mounting onto or embedded in steel surround allows their installation with complete physical protection. Available in a wide variety of configurations, these sensors offer a very practical solution to the detection of metal product, regardless of its shape and size.

The Integral sensors are available with a variety of base plates or fixing bolts to ensure straightforward installation and allow replacement of old line equipment. The Flat pack detectors allow the user to specify the required length of detector to suit the roller bed width while remote controllers facilitate safe access.

Available in AC and DC formats for direct feedback to PC systems, while at the same time capable of switching contactors or relays.

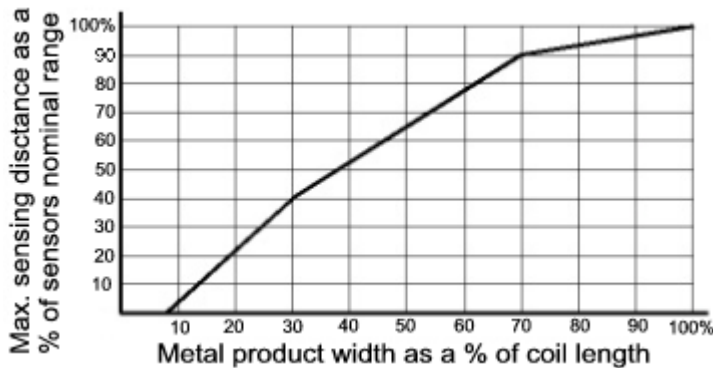
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## Sensing Range Performance

### Establishing sensing range relative to product



As a general guideline, to detect the product as it passes by the sensor, the product should cover at least 20% of the sensor length as well as be within 70% of the affective sensor range.

Sensing distance correction factors for various materials:  
 Fe: 1.0                      CrNi: 0.85                      Brass: .54  
 Al: 0.5                        Cu: .46

Where the product is expected to be above 100°C , ceramic insulation should be placed across the top face of the sensor. With guidance, it is practical to protect the sensor with steel straps across the top of the sensor. Sensors mounted end to end will necessitate the utilization of alternate frequency units.

## Technical Specifications

<b>Mechanical</b>		
Temperature Range	-10°C to +70°C	Self-contained Sensor and Remote Controller
	-40°C to +93°C	Remote Sensor
Enclosure Material	ABS or Marine Glass Fiber	
Encapsulation Material	Polyurethane Resin	Sensors are fully encapsulated.
Enclosure Rating	IP66	
Vibration & Shock Rating	Better than DIN 89011 Cat 2	
<b>Electrical</b>	<b>AC Models</b>	<b>DC Models</b>
Operating Voltage	80 - 250VAC, 50/60 Hz	24VDC +/- 15%
Short Circuit Protection	350 mA	450 mA
Minimum Load 2 Wire Models	21/22/2300 Series: 7 mA	-
	24/25/2600 Series: 7 mA	-
Leakage Current at 110 VAC 2 Wire Models	21/22/2300 Series: 1 mA	-
	24/25/2600 Series: 5 mA	-
Voltage Drop at 110 VAC 2 Wire Models	21/22/2300 Series: 16V for 30 mA load 21V for 220 mA load	-
	24/25/2600 Series: 16V for 30 mA load 21V for 220 mA load	-
Supply Connection Cable	Quick Disconnect Connector with mating Plug provided on self-contained sensors, Oilflex cable , 1.5-meter length provided on remote sensors. Optional armored cable is also available.	

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We reserve the right to alter specifications without prior notice. Specifications without tolerances are typical values.

Your Local Sales Representative:



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