



### **Installation, Operation and Instruction Manual**

#### **Product Description**

The Series MD24400-200 Semi Flush 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.

#### **Mounting Instructions**

1. Locate a mounting position to suit the format of the sensor selected. This semi-flush unit requires the metal work preferably 50 mms away from each edge of the sensor coil.
2. Firmly bolt down the sensor onto a rigid mounting point.

#### **Adjustment Instructions**

1. Loosen locking nut on Fine Sensitivity potentiometer (1 turn type) and adjust to mid-way point.
2. Slowly adjust the Corse Sensitivity potentiometer (20 turn type) clockwise until sensor switches as indicated by yellow Function LED.
3. Adjust the Corse Sensitivity potentiometer slowly counter-clockwise until the sensor un-switches and then de-sensitize by further 1/2 turn counter-clockwise. Check that the sensor switches cleanly on and off and de-sensitize further if necessary. The sensor is now set to maximum sensitivity.
4. Determine the sensing range of the sensor by using the smallest product to be detected and ensure this is at least 20% greater than product pass line. Raise sensor accordingly if this not the case.
5. Where the sensing range is greater than required, the sensitivity should be further reduced but the adjustment of the Fine Sensitivity potentiometer as this will ensure more stable performance.
6. Finger tighten (not with spanner) the locking nut on the Fine Sensitivity potentiometer.
7. Check sensor for repetitive performance with product passing over. The sensor adjustment is now completed.

**MODULOC<sup>®</sup> CONTROLS - BUILT TO LAST - MODULOC<sup>®</sup> CONTROLS - BUILT TO LAST**

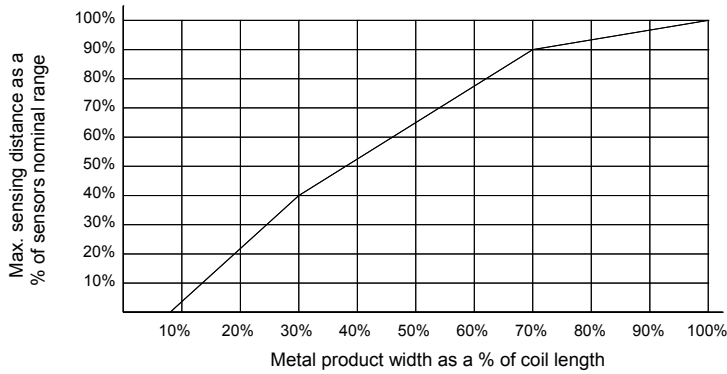
**MODULOC<sup>®</sup> Control Systems Ltd.**

Knebworth, Hertfordshire SG3 6JP United Kingdom  
Phone: +(44) 0 8457 736501 Fax: +(44) 0 1438 814366  
E-Mail: sales@moduloc-intl.com Website: www.moduloc-intl.com

**ADVANCE Sensors & Controls, Inc.**

500 Garden City Drive STE 2B, Monroeville, PA 15146 USA  
Phone: 412-824-1260 FAX: 412-824-8890  
E-Mail: sales@advancesensors.com Website: www.advancesensors.com

## Sensing Range Performance Establishing sensing range relative to product



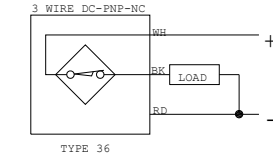
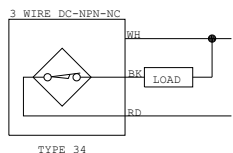
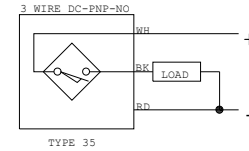
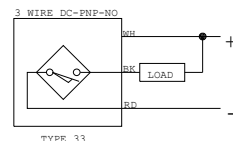
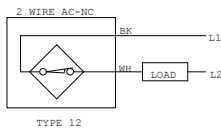
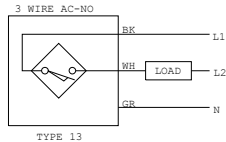
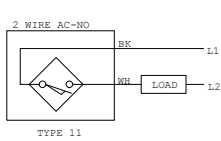
As a general guideline, to detect the product as it passes by the sensor, the product should cover at least 20% of the sensor length as well as be within 70% of the affective sensor range.

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 (14°F to +158°F )  | Self-contained Sensor and Remote Controller |
|  | -40°C to +90°C (-40°F to +194°F )   | 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               | 7 mA  |   |
| Leakage Current at 110 VAC 2 Wire Models | 1 mA  |   |
| Voltage Drop at 110 VAC 2 Wire Models    | 16V for 30 mA load<br>21V for 220 mA load   |   |
| Electrical Connection                    | -Q Quick Disconnect Plug Connector (Brad Harrison or equivalent), 3 Pole Male.  |   |
| Mating Plug                              | Part No. :ICA-02-03P-F-6 Power/Output Electrical Connector Plug Assembly, Straight Connector Plug, 3 Pole Female, Type SOOW Flexible Cable, #16 AWG, 600V, 3 conductor, 6 Feet length, Connector is molded to cable. (other cable lengths are available.) |   |



**MODULOC® CONTROLS - BUILT TO LAST - MODULOC® CONTROLS - BUILT TO LAST**

**MODULOC®**  
Control Systems

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

Bul. IM-MD24400-200-12-01  
February 2012