

S12H-275VPA-RGCB2

Analog Ferrous Metal Position Sensor

- Analog Hall Proximity Sensor
- .4" detection gap
- 0-5V output
- Stainless 12x1mm x 52mm housing
- Integral 4 pin male 12mm micro connector



CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: **S12H-275VPA-RGCB2**

| Housing | Sensor Type & Function | Electrical Option | Connection Type |
|--|--------------------------------------|---------------------------------------|---|
| S = Stainless Steel, Thread Pitch M12x1, 52mm Long | Analog Ferrous Metal Position Sensor | Regulated Input 0-5V Analog Output | CB2 = Integral 4 Pin Male 12mm Micro Connector |

Modify, update, or enhance any sensor with our modular features and functionality.

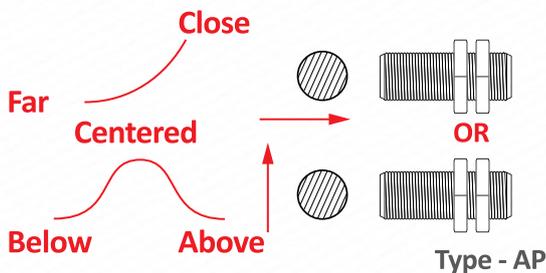
HOUSING - Aluminum, stainless steel, plastic, threaded, flange mount, customer specific

ELECTRICAL - Every sensor function available in various electrical options (NPN, PNP, TTL, etc.)

CONNECTION - Deutsch, Amphenol, many other brands, free end wires, pigtails, any length

Need a Custom Sensor Solution?... Send us your application specific requirements at sensorso.com

'Analog Output Proportional to Ferrous Metal Proximity



DESCRIPTION

- Analog output increases as ferrous metal approaches, decreases as target moves away
- Standard programming goes from 0.5V with no metal present to 4.5V when contacting steel plate.
- Target detection gap is dependent on shape/size/ferrous content.
- Custom programming available for precision repeatable detection of target positions, contact Sensor Solutions.
- Provided lock nuts used to set air gap from target.

FEATURES

- Lower Cost OEM Design
- Wide Temperature Range
- Detects Through Aluminum
- Shock and Vibration Resistant



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Note: Check our website or contact us for details on all our ferrous metal detection options.

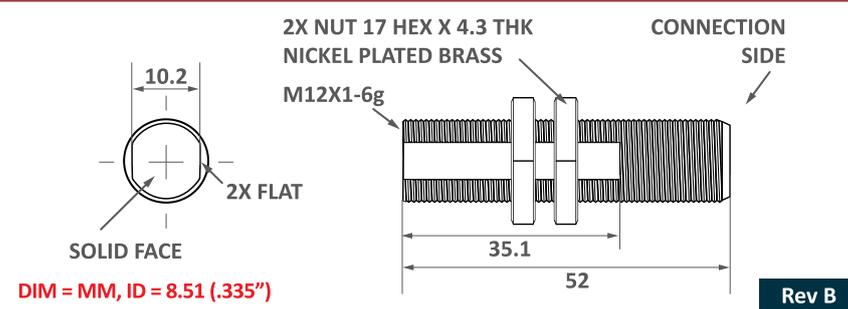
| Electrical Specifications | Conditions | Min | Max | Unit |
|---------------------------|--------------------|-------|-------|----------|
| Temperature Range* | Operating | -40 | +110* | Deg C |
| Supply Voltage, Vcc | Operating | +8 | +30 | Volts DC |
| Supply Current | Into Vcc | 2.5 | 12 | mA |
| Output Current | Recommended | -2 | +2 | mA |
| Load Capacitance | Cable and Load | n/a | +1.0 | µF |
| Frequency Range ** | Programmable | 0 | 500** | Hz |
| Saturation Voltage Low | I sink < 1.0 mA | 0 | .35 | Volts |
| Saturation Voltage High | I source < 1.0 mA | 4.65 | Vcc | Volts |
| Impulse Response Time | 500 Hz Freq. Range | 2 typ | 4 | mS |

* T max = 150°C is available, contact factory.
 ** Can be programmed for operation 2000 Hz, contact factory.

| Absolute Max Limits | Min | Max | Unit |
|-----------------------------|-----|------|---------|
| Supply Voltage, Vcc | -16 | 30 | Volts |
| Supply Voltage, <10 min | -5 | +8.5 | Volts |
| Continuous Output Current | -10 | +10 | mA |
| Vout Short Circuit Duration | - | 3 | Minutes |
| ESD | -7 | +7 | kVolts |
| Load Dump, 40 ms | - | 40 | Volts |

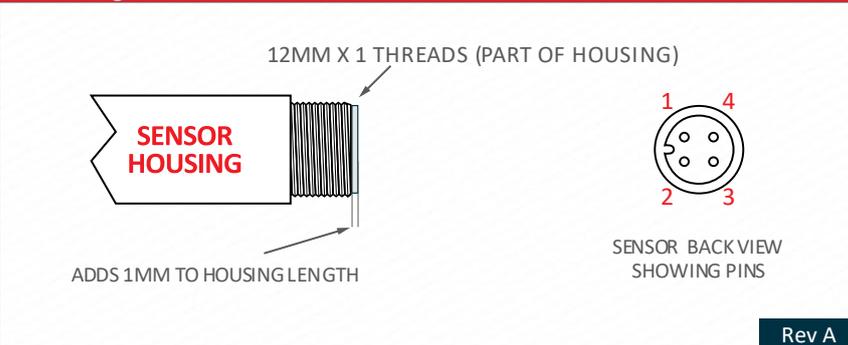
| Environmental Specifications | |
|------------------------------|---------------------------------|
| Corrosion Resistance | 500 hours salt spray ASTM B-117 |
| Installation Torque | 23 Foot-Pounds Maximum |
| Enclosure | Nema 1,3,4,6,13 & IEC IP67 |
| Vibration | 10 G's 2 to 2000 Hz Sinusoidal |
| Mechanical Shock | 100 G's, 11 mS Half-Sine |

S12H Housing, 303 Stainless Steel, M12X1, 52mm Long



| Functional Characteristics 900-12-000 w/Large Steel Target | Min | Typ | Max |
|---|-------|-------|-------|
| <i>For Sensors with Custom Programming, these values may change</i> | | | |
| Voltage at Infinity | 0.40V | 0.50V | 0.60V |
| Voltage at 0" | 4.25V | 4.50V | 4.75V |
| Conformity to Curve | -250V | - | +250V |

CB2, Integral 4 Pin Male 12mm Micro Connector



| Connections Chart | | | |
|-------------------|-------------|-------|--------------------|
| Pin 1 | Vcc | Pin 3 | Ground |
| Pin 2 | Analog Vout | Pin 4 | Program/LEAVE OPEN |
| CB2-275VPA | | | |

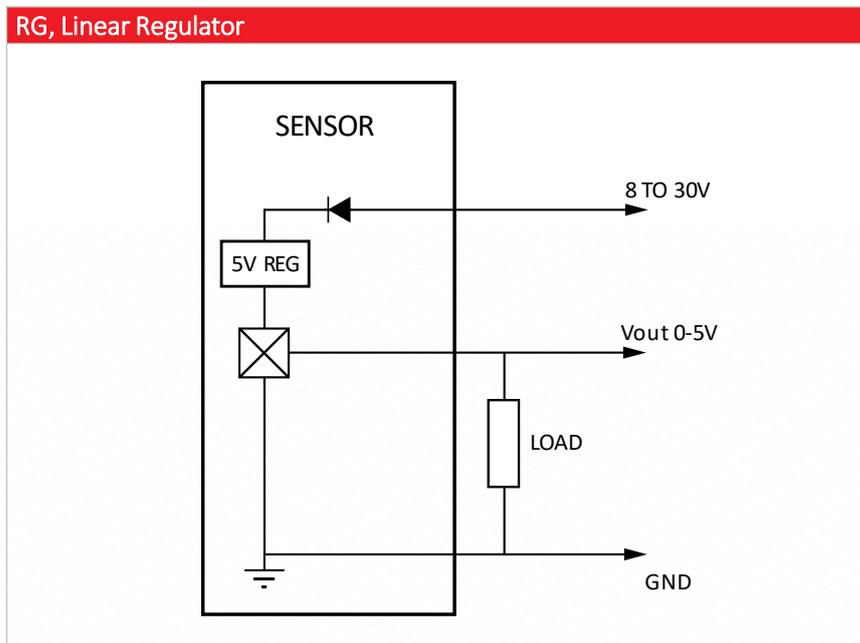
Caution: A short from the Pin 4 Program wire to either Pin 1 Vcc or Pin 3 Ground wire will cause component failure.

OTHER MATING CONNECTORS AND CABLES AVAILABLE

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| Sensor Function | Marking | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| <p>Typical 275VPA Output vs.. Gap to Steel Plate</p> <table border="1"> <caption>Approximate data from the graph</caption> <thead> <tr> <th>Gap (Inches)</th> <th>Vout (Volts)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>4.50</td></tr> <tr><td>0.05</td><td>2.50</td></tr> <tr><td>0.10</td><td>1.50</td></tr> <tr><td>0.15</td><td>1.00</td></tr> <tr><td>0.20</td><td>0.75</td></tr> <tr><td>0.25</td><td>0.65</td></tr> <tr><td>0.30</td><td>0.60</td></tr> <tr><td>0.35</td><td>0.58</td></tr> <tr><td>0.40</td><td>0.56</td></tr> <tr><td>0.45</td><td>0.55</td></tr> <tr><td>0.50</td><td>0.54</td></tr> </tbody> </table> <p>S12H-275VPA</p> | Gap (Inches) | Vout (Volts) | 0.00 | 4.50 | 0.05 | 2.50 | 0.10 | 1.50 | 0.15 | 1.00 | 0.20 | 0.75 | 0.25 | 0.65 | 0.30 | 0.60 | 0.35 | 0.58 | 0.40 | 0.56 | 0.45 | 0.55 | 0.50 | 0.54 | <p>DATE CODE, THIS SURFACE</p> <p>CHARACTERISTIC-OPTION_PROGRAMMING MARKED ON THIS SURFACE yy = PROGRAM #</p> <p>ANY FERROUS TARGET</p> <p>AIR GAP</p> <p>NO ORIENTATION REQUIRED</p> |
| Gap (Inches) | Vout (Volts) | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 4.50 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.05 | 2.50 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.10 | 1.50 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.15 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 0.75 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | 0.65 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.30 | 0.60 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.35 | 0.58 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 0.56 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.45 | 0.55 | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | 0.54 | | | | | | | | | | | | | | | | | | | | | | | | |



| Date Code 'YYM' | | YY = YEAR, M = MONTH | |
|-----------------|-------|----------------------|-------|
| A JAN | D APR | H JUL | L OCT |
| B FEB | E MAY | J AUG | M NOV |
| C MAR | G JUN | K SEP | N DEC |

Handling Instructions

DO NOT CONTACT FACE TO FACE

CONTACT WITH OTHER MAGNETS MAY REDUCE THE MAXIMUM OPERATING GAP

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This series datasheet could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These change will be incorporated in future revisions.

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