**DR686**

Direct replacement encoder for Siemens 1XP8001

Designed as a drop in replacement for the Siemens 1XP8001 encoder, the **DR686** is ready for delivery. The unique threaded shaft made this encoder hard to find, but it is a standard order at EPC.

Configurations can be ordered with either 1024 or 2048 CPR, with a 12 pin connector at the end of 18” of cable.

**Features:**

- Low profile (1.19”) encoder body
- 2 piece construction; shaft screws into motor, then encoder attaches to shaft
- 1024 and 2048 CPR available
- Line Driver output
- Flex Arm mounting system makes installation easy and allows for insulation and isolation from vibration
- 12-pin connector at the end of 18” of cable
- Advanced Opto-ASIC technology for superior noise immunity
- Withstands temperatures up to 100° C
- IP64 sealing

*Contact Customer Service for pricing. Discounts available for volume orders.*

<table>
<thead>
<tr>
<th>ORDER NUMBER</th>
<th>CPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR686-01</td>
<td>1024</td>
</tr>
<tr>
<td>DR686-02</td>
<td>2048</td>
</tr>
</tbody>
</table>

**The Accu-Coder® Advantage**

- US-based since 1969
- Industry-best 3-year warranty
- Exceptional customer service
- Fast lead times – contact us for lead times and expedite options
### MODEL DR686 SPECIFICATIONS

**Electrical**
- Input Voltage: 4.75 to 28 VDC (16 VDC max at 100° C)
- Input Current: 100 mA max with no output load
- Output Format: Incremental – Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the mounting face. See Waveform Diagram below.
- Output Types: Line Driver – 20 mA max per channel (Meets RS 422 at 5 VDC supply)
- Freq. Response: 200 kHz standard
- Noise Immunity: Tested to BS EN61000-6-2; BS EN50081-3; BS EN50081-3, BS EN61000-6-6, BS EN50501
- Quadrature: 67.5° electrical or better is typical, 54°
- Edge Separation: 0.09 in.
- Accuracy: Within 0.01° mechanical from one cycle to any other cycle, or ±0.6 arc minutes

**Mechanical**
- Max Shaft Speed: 3,750 RPM
- User Shaft Tolerances:
  - Radial Runout: ±0.0007" max
  - Axial Endplay: ±0.030" max
  - Starting Torque: 0.50 oz-in
  - Moment of Inertia: 3.9 X 10^-3 oz-in-sec^2
  - Max Acceleration: 1 X 10^6 rad/sec^2
- Electrical Connector: 18" cable (foil and braid shield, 24 AWG conductors) with 12-pin connector
- Housing: Black non-corrosive finish
- Mounting: Flex Arm Mount standard
- Weight: 3.5 oz typical

**Environmental**
- Operating Temp: 0° to 100° C
- Storage Temp: -40° to 100° C
- Humidity: 98% RH non-condensing
- Vibration: 10 g @ 58 to 500 Hz
- Shock: 50 g @ 11 ms duration
- Sealing: IP64

### DR686 Dimensions

- Ø2.0
- 1.60
- 1.19
- 0.9

### DR686 Waveform Diagram

- CHANNEL A
- CHANNEL A'
- CHANNEL B
- CHANNEL B'
- CHANNEL Z
- CHANNEL Z'

### DR686 Wiring Table

<table>
<thead>
<tr>
<th>PIN</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>CHANNEL B'</td>
</tr>
<tr>
<td>B</td>
<td>+VDC</td>
</tr>
<tr>
<td>C</td>
<td>CHANNEL Z</td>
</tr>
<tr>
<td>D</td>
<td>CHANNEL Z'</td>
</tr>
<tr>
<td>E</td>
<td>CHANNEL A</td>
</tr>
<tr>
<td>F</td>
<td>CHANNEL A'</td>
</tr>
<tr>
<td>G</td>
<td>+VDC</td>
</tr>
<tr>
<td>H</td>
<td>CHANNEL B</td>
</tr>
<tr>
<td>J</td>
<td>N/C</td>
</tr>
<tr>
<td>K</td>
<td>COMMON</td>
</tr>
<tr>
<td>L</td>
<td>COMMON</td>
</tr>
<tr>
<td>M</td>
<td>+VDC</td>
</tr>
</tbody>
</table>

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**Don't see the exact encoder you need?**

Call *(800) 366-5412* and our Technical Sales Department will cross-reference your encoder to the correct EPC model.