Designed as a drop-in replacement for the AMS Incremental Optical Encoders, the DR857 meets or exceeds all OEM specifications, and is available with EPC's competitive pricing, short lead-time, and 3 year warranty. The DR857 is designed to provide precision feedback control on any AMS Controls machine that includes their optical encoder, from metal roll forming to material tracking equipment. As always, the DR857 comes with the renowned Accu-Coder™ quality, and you can get it FAST - standard lead time is just 6 business days, with expedite options available.

Features:
- Standard 3 inch round encoder body
- 0256, 0500, 1000, 2000, and 4000 CPR available
- 3/8” shaft made of 303 Stainless Steel
- 5V Line Driver output
- End-mount 10-pin MS connector
- Precision ABEC ball bearings
- IP66 sealing
- Get it fast – standard lead time of 6 business days (expedite options available)

DR857 Price: $545*
*Add $45 for 4000 CPR

<table>
<thead>
<tr>
<th>AMS Part #</th>
<th>EPC Order Number</th>
<th>CPR</th>
</tr>
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<tbody>
<tr>
<td>N256</td>
<td>DR857-0256</td>
<td>0256</td>
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<tr>
<td>N500 / S1000</td>
<td>DR857-0500</td>
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<tr>
<td>N1000</td>
<td>DR857-1000</td>
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<tr>
<td>N4000 / S2000</td>
<td>DR857-4000*</td>
<td>4000</td>
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Blue indicates price adder.
**Model DR857 Specifications**

**Electrical**

- Input Voltage: 4.75 to 28 VDC max for temperatures up to 70°C, 4.75 to 24 VDC for temperatures between 70°C and 100°C.
- Input Current: 100 mA max with no output load.
- Input Ripple: 100 mV peak-to-peak at 0 to 100 kHz.
- Output Format: Incremental – Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the encoder mounting face. See Waveform Diagram.
- Output Type: Line Driver – 20 mA max per channel (Meets RS 422 at 5 VDC supply).
- Max Frequency: 500 kHz.
- Electrical Protection: Reverse voltage and output short circuit protected. NOTE: Sustained reverse voltage may result in permanent damage.
- Noise Immunity: Tested to BS EN61000-4-2; IEC801-3; BS EN61000-4-4; IEC61000-4-6; BS EN61000-4-21 (with European compliance option); BS EN61000-4-22.
- Symmetry: 1 to 6000 CPR: 180° (±18°) electrical at 100 kHz output. 6001 to 20,480 CPR: 90° (±36°) electrical.
- Quad Phasing: 1 to 6000 CPR: 90° (±22.5°) electrical at 100 kHz output. 6001 to 20,480 CPR: 90° (±36°) electrical.
- Min Edge Sep: 1 to 6000 CPR: 67.5° electrical at 100 kHz output. 6001 to 20,480 CPR: 54° electrical.
- Rise Time: Less than 1 microsecond.
- Accuracy: Instrument and Quadrature Error: For 200 to 1999 CPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle. For 2000 to 6000 CPR, 0.017° mechanical (0.6 arc minutes) from one cycle to any other cycle. Interpolation error (units > 3000 CPR only) within 0.005° mechanical. (Total Optical Encoder Error = Instrument + Quadrature + Interpolation)

**Mechanical**

- Max Shaft Speed: 8000 RPM. Higher shaft speeds may be achievable, contact Customer Service.
- Shaft Material: 303 Stainless Steel.
- Shaft Rotation: Bi-directional.
- Radial Shaft Load: 80 lb max. Rated load of 20 to 40 lb for bearing life of 1.5 x 10^9 revolutions.
- Axial Shaft Load: 80 lb max. Rated load of 20 to 40 lb for bearing life of 1.5 x 10^9 revolutions.
- Starting Torque: 1.0 oz-in typical with IP64 shaft seal or no seal.
- 3.0 oz-in typical with IP64 shaft seal.
- 7.0 oz-in typical with IP67 shaft seal.
- Moment of Inertia: 5.2 x 10^-4 oz-in-sec^2.
- Housing: Black non-corrosive finish.
- Bearings: Precision ABEC ball bearings.
- Weight: 20 oz typical.

**Environmental**

- Storage Temp: -25° to 85°C.
- Operating Temp: 0° to 70°C for CPR of 0256 or 4000; 0° to 100°C for CPR 0500, 1000, or 2000.
- Humidity: 95% RH non-condensing.
- Vibration: 20 g @ 58 to 500 Hz.
- Shock: 75 g @ 11 ms duration.
- Sealing: IP66.

**DR857 Dimensions**

- DR857 Waveform Diagram

**DR857 Wiring Table**

For EPC-supplied mating cables, refer to wiring table provided with cable. Trim back and insulate unused wires.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
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<tbody>
<tr>
<td>I</td>
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<td>J</td>
<td>GND</td>
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<tr>
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<td>A+</td>
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<td>E</td>
<td>Z+</td>
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