**CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENCODER TYPE</strong></td>
<td>Hollow shaft encoder (blind end)</td>
</tr>
<tr>
<td><strong>SMD - TECHNOLOGY</strong></td>
<td>Strong compact electronics</td>
</tr>
<tr>
<td><strong>HIGH IP-RATING</strong></td>
<td>Std. IP 64 (option; Ribbon cable + IDC connector = IP50)</td>
</tr>
<tr>
<td><strong>LOW CURRENT CONSUMPTION</strong></td>
<td>To be connected directly to PLC’s and counters</td>
</tr>
<tr>
<td><strong>SHORT CIRCUIT PROTECTION</strong></td>
<td>Thermal shut down at 155°C</td>
</tr>
<tr>
<td><strong>WIDE SUPPLY RANGE</strong></td>
<td>Min. 4.5V to max 30V</td>
</tr>
<tr>
<td><strong>STRONG CONSTRUCTION</strong></td>
<td>Based on 2 precision ball bearings, for industrial environments</td>
</tr>
</tbody>
</table>

**ELECTRICAL SPECIFICATIONS**

- **Output**
  - Totempole
- **Output waveform**
  - Incremental (A, B)
- **Zero or index pulse**
  - (Z) one pr./rev.
- **Supply-voltage (Vin)**
  - Min 4.5V to Max. 30V
  - Reverse polarity protection
- **Current (no load)**
  - 35mA
- **Max. load pr. output**
  - 20mA (Short circuit protected)*
- **V out low**
  - Max. 500 mV @ I = 10 mA
- **Operating temp.**
  - -40°C to +85°C
- **Storage temp.**
  - -40°C to +85°C
- **Max. pulse frequency**
  - 200 kHz *
- **V out high**
  - Min. (Vin -0.6) @ I = -10mA
  - Min. (Vin -1.3) @ I = -25mA
- **Cable data**
  - 5(0.14 mm²)or 8-leads(0.05mm²) shielded
- **Output signals**
  - Standard, Inverted
  - Differential (RS-422A compatible)
- **Certified acc. to**
  - EN 50081-1 and EN 50082-2

* = It is not recommended to combine max value for all 3 parameters

**MECHANICAL SPECIFICATIONS**

- **Weight**
  - About 35 g (+cable = 0.040 Kg/meter)
- **Materials: Housing**
  - Electroplated steel and brass
- **Shaft**
  - Brass
- **Bearings**
  - Lifetime lubricated ball-bearings
- **Fix. clamp**
  - Brass
- **H.-Shaft dimensions**
  - View Ordering Code, next page
- **H.-Shaft loads**
  - Axial max. 20 N
  - Radial max. 20 N
- **Max. rev.**
  - 12,000 rev./min.
- **IP-rating**
  - IP 64
- **Start torque**
  - <0.005 Nm at 25°C
- **Mass moment of inertia**
  - 1.0 gcm²
- **Max. shock**
  - 100 G/11 ms.
- **Bump**
  - 10 G - 16 ms (1000 x 3axis)
- **Vibration**
  - (10 - 2000 Hz )/10 G

**MECHANICAL DIMENSIONS**

- **WARNING!!**
  - M1.6x5
  - hex.key=1.5
  - Max. torque: 10 Ncm
- **Max. Movement**
  - Axial ±0.25
  - Radial ±0.05
- **Options, Cable take out:**
  - side-wise or back-wise
- **L = Hollow shaft length inside**: MAX.14 (MIN. 8)

---

**OUTPUT CIRCUIT**

- **+ Vcc**
- **Signal**
- **0 - Volt**
- **Shield**

* Shield connected to housing
OUTPUT WAVEFORM

 Rotation: Clockwise (cw) from shaftside

\[ X = 180^\circ \pm 36^\circ \text{ and } Y = 90^\circ \pm 18^\circ \]

Z pulses: Gated with A and B (standard)

Options: TTL or HTL compatible. Open Collector NPN or PNP. Gated Z-pulse or none-gated Z-pulse.

View more Output options in section 16 - page 1 to 2

ORDERING CODES

<table>
<thead>
<tr>
<th>Options</th>
<th>Order code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulses pr.rev.:</td>
<td>XXXX</td>
</tr>
<tr>
<td>Output signal:</td>
<td>Normal (TP-Standard)</td>
</tr>
<tr>
<td></td>
<td>TP-Differential, 6 channel</td>
</tr>
<tr>
<td>Hollow Shaft</td>
<td>Ø3 mm</td>
</tr>
<tr>
<td>Dimensions: (Tolerance G7)</td>
<td>Ø4 mm</td>
</tr>
<tr>
<td></td>
<td>Ø5 mm</td>
</tr>
<tr>
<td></td>
<td>Ø6 mm</td>
</tr>
<tr>
<td></td>
<td>Ø1/4&quot;</td>
</tr>
<tr>
<td>IP-rating:</td>
<td>IP 64</td>
</tr>
<tr>
<td>Round Cable</td>
<td>Standard 1 meter</td>
</tr>
<tr>
<td>Length of cable:</td>
<td>No. of meters</td>
</tr>
<tr>
<td>Round Cable take out:</td>
<td>Side</td>
</tr>
<tr>
<td>Cable and connector options:</td>
<td>View section 15 page 10 to 14</td>
</tr>
<tr>
<td>Anti rotation spring coupling or Flange / Plate:</td>
<td>View Section 8 page 9 to 13</td>
</tr>
</tbody>
</table>

PULSES/REV.

<table>
<thead>
<tr>
<th>No. of pulses</th>
<th>Normal (TP-Standard)</th>
<th>TP-Differential, 6 channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>36</td>
<td>125</td>
</tr>
<tr>
<td>11</td>
<td>50</td>
<td>128</td>
</tr>
<tr>
<td>12</td>
<td>60</td>
<td>150</td>
</tr>
<tr>
<td>15</td>
<td>75</td>
<td>180</td>
</tr>
<tr>
<td>25</td>
<td>90</td>
<td>200</td>
</tr>
</tbody>
</table>

Flat Ribbon Cable and/or Connector

View section 15 page 10 to 14

Options

Flat Cable (only IP 50)
Ribbon + IDC or AMP

Connector on Encoder:
(only IP64)

CHARACTERISTICS: For montage on motor or other unit.

2RMHF

View more options and accessories in Section 9 page 1 to 6

2RMHF

Motor

Encoder 2RMHF

Clamp-bushing

Plate

Screwed to plate

Spring no. 80139791

Tightened to motor shaft with clamp bushing

Plate mounted on motor

TLF. +45 48 17 27 02  FAX +45 48 17 22 84
info@scancon.dk             www.scancon.dk

Eng. Rev 001  Feb - 2007

Section 7 - page 2