AHG 926 SSI
Absolute hollow-shaft angle encoder
AHG 926 SSI  Dimensional drawing and features

Features:

- 24 bit, hollow-shaft multi-turn absolute encoder
- 8192 (13 bit) max. resolution for single turn. Multi-turn a total of 24 bits possible
- Configurable resolution
- Zero-set push-button or spur line
- SSI and RS 422 configurable interface
- Compact dimensions
- Highly shock and vibration proof
- High degree of protection: IP 65
- Hollow-shaft diameter 16 mm
AHG 926 SSI  

Configuration functions

Order designation

<table>
<thead>
<tr>
<th>Torque support</th>
<th>Plug outlet radial</th>
<th>Cable outlet radial</th>
<th>ssi-interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin = 1</td>
<td>SR</td>
<td>KR</td>
<td>S</td>
</tr>
<tr>
<td>Angle = 2</td>
<td>SR</td>
<td>KR</td>
<td>S</td>
</tr>
</tbody>
</table>

Example of an order for an AHG 926 with a Ø 16 mm diameter shaft, pin torques support, radial plug outlet and ssi-interface = AHG 926 16 1SRS
### AHG 926 SSI  Technical data and characteristics to DIN 32 878

<table>
<thead>
<tr>
<th></th>
<th>Values</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>see drawing</td>
<td></td>
</tr>
<tr>
<td>Mass</td>
<td>About 0.8</td>
<td>kg</td>
</tr>
<tr>
<td>Moment of inertia of the rotor</td>
<td>152.77</td>
<td>gcm²</td>
</tr>
<tr>
<td>Code type</td>
<td>gray/binär</td>
<td></td>
</tr>
<tr>
<td>Programmable code direction (^{1)}</td>
<td>cw/ccw</td>
<td></td>
</tr>
<tr>
<td>Measuring step</td>
<td>2.6</td>
<td>Minutes of arc</td>
</tr>
<tr>
<td>Max. number of steps per revolution</td>
<td>8192</td>
<td></td>
</tr>
<tr>
<td>Max. number of revolutions</td>
<td>8192</td>
<td></td>
</tr>
<tr>
<td>Error limits</td>
<td>40</td>
<td>Minutes of arc</td>
</tr>
<tr>
<td>Repeatability</td>
<td>0.1</td>
<td>Degrees</td>
</tr>
<tr>
<td>Operating speed</td>
<td>3000</td>
<td>min⁻¹</td>
</tr>
<tr>
<td>Position formation time</td>
<td>0.5</td>
<td>ms</td>
</tr>
<tr>
<td>Max. angular acceleration</td>
<td>0.6 x 10⁶</td>
<td>rad/s²</td>
</tr>
<tr>
<td>Operating torque</td>
<td>0.4</td>
<td>Ncm</td>
</tr>
<tr>
<td>Starting torque</td>
<td>0.5</td>
<td>Ncm</td>
</tr>
<tr>
<td>Bearing life</td>
<td>1 x 10³</td>
<td>Revolutions</td>
</tr>
<tr>
<td>Working temperature range</td>
<td>-20...+70</td>
<td>°Celsius</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>-40...+85</td>
<td>°Celsius</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>-40...+100</td>
<td>°Celsius</td>
</tr>
<tr>
<td>Permissible relative humidity</td>
<td>98</td>
<td>%</td>
</tr>
<tr>
<td>EMY according to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 500 82 - 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 500 81 - 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance to shocks in the mounted state to DIN IEC 68 part 2-27</td>
<td>100/6</td>
<td>g/ms</td>
</tr>
<tr>
<td>Resistance to vibration in the mounted state to DIN IEC 68 part 2-6</td>
<td>20/10...2000</td>
<td>g/Hz</td>
</tr>
<tr>
<td>Degree of protection to DIN VDE 0470 part 1</td>
<td>IP 65</td>
<td></td>
</tr>
<tr>
<td>Operating voltage range</td>
<td>10...32</td>
<td>V</td>
</tr>
<tr>
<td>Recommended supply voltage</td>
<td>15</td>
<td>V</td>
</tr>
<tr>
<td>Max. operating current without load</td>
<td>220</td>
<td>mA</td>
</tr>
<tr>
<td>Initialization time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From the moment the supply voltage is applied, this is the time which elapses before the data word can be correctly read in.</td>
<td>1050</td>
<td>ms</td>
</tr>
</tbody>
</table>
**AHG 926 SSI**

**Technical data and characteristics to DIN 32 878**

| Signal line | via 12 pole connector,  
potential free w.r.t. housing |
|---|---|
| signaux de liaison | Clock+, Clock-, Data+, Data-,  
Tx D+, Tx D-, Rx D+, Rx D-  
**2)** |
| | SSI  
RS 422 asynchronous for configuration |
| SET (electronic adjustment)  
**3)** | H activ  
(L = 0-4,7 V; H = 10-24 V) |
| V / R (step sequence in direction of rotation)  
**1)** | L activ  
(L = 0-0,9 V; H = 1,9-24 V) |

**Explanations**

1) Code direction indicates the direction of rotation in which, looking at the shaft direction “A”, the output code corresponds to increasing values.

- cw = Clockwise direction
- ccw = Counter clockwise direction

You have the possibility of reversing the code direction or the step sequence via the socalled V/R-input.

2) The encoder can be programmed with various parameters via the asynchronous RS 422 interface.
For this, you will need a programming tool.

3) By means of a short high signal, >1 ms (10-24 V) on the appropriate pin of the connecting plug or the stranded wire at the cable outlet, the encoder is set to 0 or to a previously programmed value.
### AHG 926 SSI Connection allocation

<table>
<thead>
<tr>
<th>Pin 12 pole flanged plug</th>
<th>Colour</th>
<th>Signal</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>blue</td>
<td>GND</td>
<td>Earth connection of the encoder. Electrically isolated from housing.</td>
</tr>
<tr>
<td>2</td>
<td>white</td>
<td>Data +</td>
<td>Positive, serial data output from the differential line driver.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A high level at the output corresponds to logic 1 in positive logic.</td>
</tr>
<tr>
<td>3</td>
<td>yellow</td>
<td>Clock +</td>
<td>Clock + forms a current loop together with clock -.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A current of 7 mA in the direction of the clock + input has the effect of a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>logic 1 in positive logic.</td>
</tr>
<tr>
<td>4</td>
<td>pink</td>
<td>R x D +</td>
<td>Positive RS 422 - input</td>
</tr>
<tr>
<td>5</td>
<td>black</td>
<td>R x D -</td>
<td>Negative RS 422 - input</td>
</tr>
<tr>
<td>6</td>
<td>grey</td>
<td>T x D +</td>
<td>Positive RS 422 - output</td>
</tr>
<tr>
<td>7</td>
<td>green</td>
<td>T x D -</td>
<td>Negative RS 422 - output</td>
</tr>
<tr>
<td>8</td>
<td>red</td>
<td>Vs</td>
<td>Supply voltage to the encoder</td>
</tr>
<tr>
<td>9</td>
<td>orange</td>
<td>Teleadjust/SET</td>
<td>If this input is at logic 1, then the encoder is allocated the preset value. Default 0.</td>
</tr>
<tr>
<td>10</td>
<td>brown</td>
<td>Data -</td>
<td>Negative, serial data output from the differential line driver.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A high level at the output corresponds to logic 0 in positive logic.</td>
</tr>
<tr>
<td>11</td>
<td>lilac</td>
<td>Clock -</td>
<td>Clock - forms a current loop together with clock -.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A current of 7 mA in the direction of the clock + input has the effect of a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>logic 0 in positive logic.</td>
</tr>
<tr>
<td>12</td>
<td>orange/black</td>
<td>V/R</td>
<td>Forward/reverse: this input programs the counting direction of the encoder. If not connected, this input is high. If the encoder, viewed on the shaft direction &quot;A&quot;, is rotated in the clockwise direction, the count increases. If the encoder is intended to count upwards when the shaft is rotated in the counter-clockwise direction, this connection must be connected permanently to a low level (GND).</td>
</tr>
</tbody>
</table>
Max Stegmann GmbH  
Motion control technology  
Electronics

Postbox 15 60  
D- 78 156 Donaueschingen  
D- 78 166 Donaueschingen  
Telefon (0 77 1) 80 70 0  
Telefax (0 77 1) 80 71 00  
Internet: www.stegmann.de  
e-mail: steegmann-gmbh@t-online.de

Agents
Post codes: 17 - 25
Heinrich Wolf  
Industrieautomation  
Röntgenstraße 1  
D - 23 701 Eutin  
Tel. (0 45 21) 7 39 52  
Fax (0 45 21) 7 42 79

Heinrich Jürgens  
Engineering office  
Roggendorf 5  
D - 31 787 Hannen  
Tel. (0 51 38) 98 00  
Fax (0 51 38) 98 00

P. C. 32, 33, 40 - 42, 44 - 59  
STEGMANN  
Vertriebs GmbH West  
Reichspresidentenstr. 21 - 25  
D - 45 470 Mülheim/Ruhr  
Tel. (0 20 8) 30 89 60  
Fax (0 20 8) 30 89 66

P. C. 35, 36, 55, 60, 61, 63 - 69  
TOB - Techn. Büro  
Oberkötter GmbH  
Neue Straße 23  
D - 63 636 Brachtel  
Tel. (0 60 55) 60 62 42 / 43  
Fax (0 60 55) 60 64 44

P. C. 70 - 79, 88, 89 except  
747 - 749, 767, 769, 893, 894  
ittf-Ingenieurbüro  
Hans-Dieter Ramz  
P. O. Box 19 33  
D - 72 709 Reutlingen  
Tel. (0 71 21) 23 90 93  
Fax (0 71 21) 24 70 64

P. C. 80, 87, 90 - 96, 893, 894  
Wolfgang Hempel  
Industrial products  
An der Radrunde 168  
D - 90 455 Nürnberg  
Tel. (0 91 1) 8 88 14 6  
Fax (0 91 1) 8 88 86 79  
e-mail: info@hempel.de  
Internet: www.hempel.de

P. C. 01, 04, 07 - 09, 98  
Spezialantriebs-technik GmbH  
Nordstraße 21  
D - 04 746 Hertha  
Tel. (0 33 43 28) 4 13 74  
Fax (0 33 43 28) 39 23 38

Distributors

Austria  
Ing. Franz Schmachtl KG  
P. O. Box 362  
Pummererstraße 36  
A - 40 21 Linz  
Tel. 07 32 - 76 46 - 0  
Fax 07 32 - 78 50 36

AUS Australia  
Erwin Sick  
Optic Electronic Pty. Ltd.  
899 Heidelberg Road  
Merryll, Victoria 3079  
Tel. 03 9497 4100  
Fax 03 9497 1187

B/LUX  
STEGMANN B. V.  
Helhoek 30  
NL - 69 23 PE Groessen  
Tel. 03 31 316, 59 66 37  
Fax 03 31 316, 59 66 49

CH - Switzerland  
SMT Keller AG  
P. O. Box 222  
Landstrasse 35  
CH - 84 50 Andelfingen  
Tel. 052 - 317 33 60  
Fax 052 - 317 35 51

CZ - Czech Republic  
Schmachtl CS  
Videnska 185  
CS - 25 242 Vestec-Praha  
Tel. 0 2 - 90 54 15  
Fax 0 2 - 64 0 3 0 0

DK - Denmark  
Compower A/S  
Snedeholm 13 B  
DK - 27 30 Horlev  
Tel. 44 92 66 20  
Fax 44 92 66 02

Internet: www.compower.dk

E - Spain  
S. A. Sistel  
Sanatorio, 25  
E - 08 206 Sabadell  
Tel. 93 - 7 2 7 0 0 7 4  
Fax 93 - 7 2 5 3 5 7 6

FIN - Finland  
SENSONOR OY  
Kartanonie 20  
SF - 00 330 Helsinki  
Tel. 358 - 9 - 4 7 7 7 2 0 0  
Fax 358 - 9 - 4 7 7 7 2 0 2 0

F - France  
STEGMANN S. à. r. l.  
15, rue du Parc  
F - 67 205 Oberhausbergen  
Tel. 03 88 - 56 92 00  
Fax 03 88 - 56 92 05

GB - United Kingdom & Eire  
STEGMANN UK Ltd.  
5 The Courtyard  
Reddicap Trading Estate  
GB - Sutton Coldfield, B75 7 BU  
Tel. 0121 - 311 03 00  
Fax 0121 - 311 01 91  
e-mail: mail@stegmann.co.uk

I - Italy  
STEGMANN s. r. l.  
Via R. Luxemburg 12/14  
I - 10 003 Collegno  
Tel. 011 - 79 79 65  
Fax 011 - 7 9 7 9 7 2 4

IND - India  
PG ELECTRONICS  
217 Ashirwad Industrial Estate  
Bldg. No. 3, Ram Mandir Road  
Goregoan (West),  
Bombay - 400 104  
Tel. 022 - 87 36 6 5 7  
Fax 022 - 8 7 2 4 9 2 1

KOREA  
Kwangwoong International Co. Ltd.  
2 Fl. Bujeon Bld., 194 - 92 Anyang-Deng  
Marian-Ku, Anyang-City, Kyongiu-Do  
Tel. 03 43 - 66 - 08 70  
Fax 03 43 - 66 - 08 73

Incremental and  
absolute measuring systems.  
Feedback systems  
for servomotors.

Synchronous motors  
Stepping motors  
Control units for motors  
Gears - Actuating drives

© Max Stegmann GmbH 1998. All rights reserved.  
The products are specified by the statements. This product  
information contains no assurance of properties for use.  
Rights for delivery options and technical changes are reserved.

Product Information 910980 103093, Issue 3/98  