



## Type SCH24AC

- Absolute Hollow Shaft Encoder - Ø 24 mm
- Current Output 0 – 20mA or 4 – 20mA
- Full Range Output over one Revolution or one half Revolution
- Enclosure Rating IP 64

### Electrical Specifications

|                                     |                                                                                                                                                                                                                         |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Encoder Type:</b>                | Absolute Magnetic                                                                                                                                                                                                       |
| <b>Resolution:</b>                  | 2 <sup>10</sup> (1024) points per revolution                                                                                                                                                                            |
| <b>Supply Voltage:</b>              | 12 Vdc min. to 18 Vdc max. or 20 Vdc min. to 28 Vdc max.                                                                                                                                                                |
| <b>Typical Current Consumption:</b> | 40 mA @ 20mA output current                                                                                                                                                                                             |
| <b>Output Current:</b>              | 0 – 20 mA or 4 – 20 mA                                                                                                                                                                                                  |
| <b>Accuracy:</b>                    | +/- 0,2% of full scale                                                                                                                                                                                                  |
| <b>Output Format:</b>               | Full range output over one revolution (360°) or over one half revolution (180°)                                                                                                                                         |
| <b>Current Sense Resistor:</b>      | Max. 400Ω – recommended 250Ω                                                                                                                                                                                            |
| <b>Output Update Rate:</b>          | 2610 updates/sec. ~ 383μsec. per update                                                                                                                                                                                 |
| <b>Electrical Protection:</b>       | Reverse polarity and output short circuit protected                                                                                                                                                                     |
| <b>Noise Immunity:</b>              | Tested to EN61000-6-2 : 2005 (industrial environments) Electromagnetic compatibility (EMC) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments) for Electromagnetic compatibility (EMC) |

### Mechanical Specifications

|                                |                                                                         |
|--------------------------------|-------------------------------------------------------------------------|
| <b>Material:</b>               | Housing: Brass<br>Cap: Electroplated Steel<br>Shaft: Brass              |
| <b>Weight:</b>                 | Encoder: ~ 50 gr (1,76 oz)<br>Cable: 50 gr / meter (1,76 oz / meter)    |
| <b>Bearing Life:</b>           | > 1,9 x 10 <sup>10</sup> revolutions at rated load                      |
| <b>Shaft Speed:</b>            | 12.000 rpm (max.)                                                       |
| <b>Starting Torque:</b>        | < 0,005 Nm (0,708 oz-in) at 25° C                                       |
| <b>Mass Moment of Inertia:</b> | 1,46 gcm <sup>2</sup> (2,07 x 10 <sup>-5</sup> oz-in-sec <sup>2</sup> ) |
| <b>Shaft Loads:</b>            | Axial: 20 N (4,5 lbs) max.<br>Radial: 20 N (4,5 lbs) max.               |

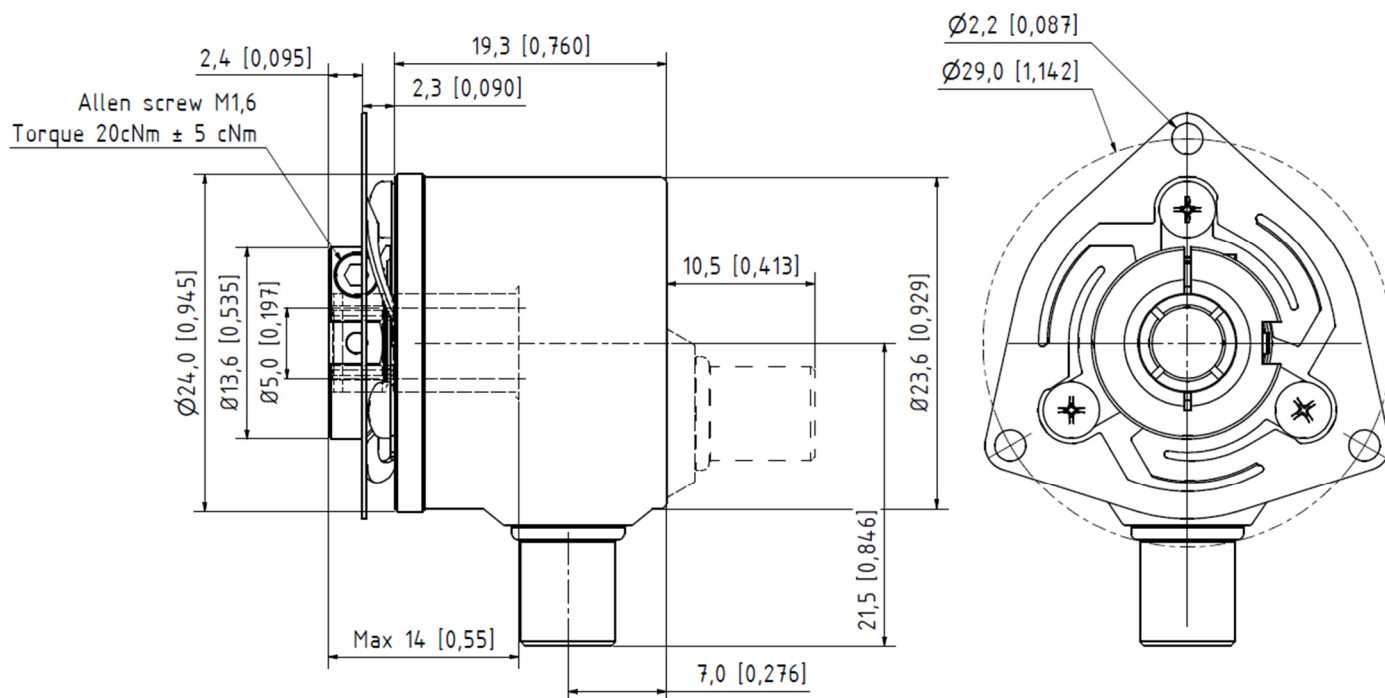
### Environmental Specifications

|                          |                              |
|--------------------------|------------------------------|
| <b>Operating Temp.:</b>  | -40° to +85° C               |
| <b>Storage Temp.:</b>    | -40° to +85° C               |
| <b>Shock:</b>            | 100 G / 11 ms                |
| <b>Vibration:</b>        | 10-2000 Hz / 10 G            |
| <b>Bump:</b>             | 10 G / 16 ms (1000 x 3 axis) |
| <b>Humidity:</b>         | 98 % RH without condensation |
| <b>Enclosure Rating:</b> | IP 64 / Nema 4 (approx.)     |

### Connection Options

|               |                                                                            |
|---------------|----------------------------------------------------------------------------|
| <b>Cable:</b> | 4 leads (0,14 mm <sup>2</sup> , 26 AWG) - Standard twisted pairs; shielded |
|---------------|----------------------------------------------------------------------------|

## Mechanical Dimensions



Standard Cable Gland  
Side (S) or Back (B)

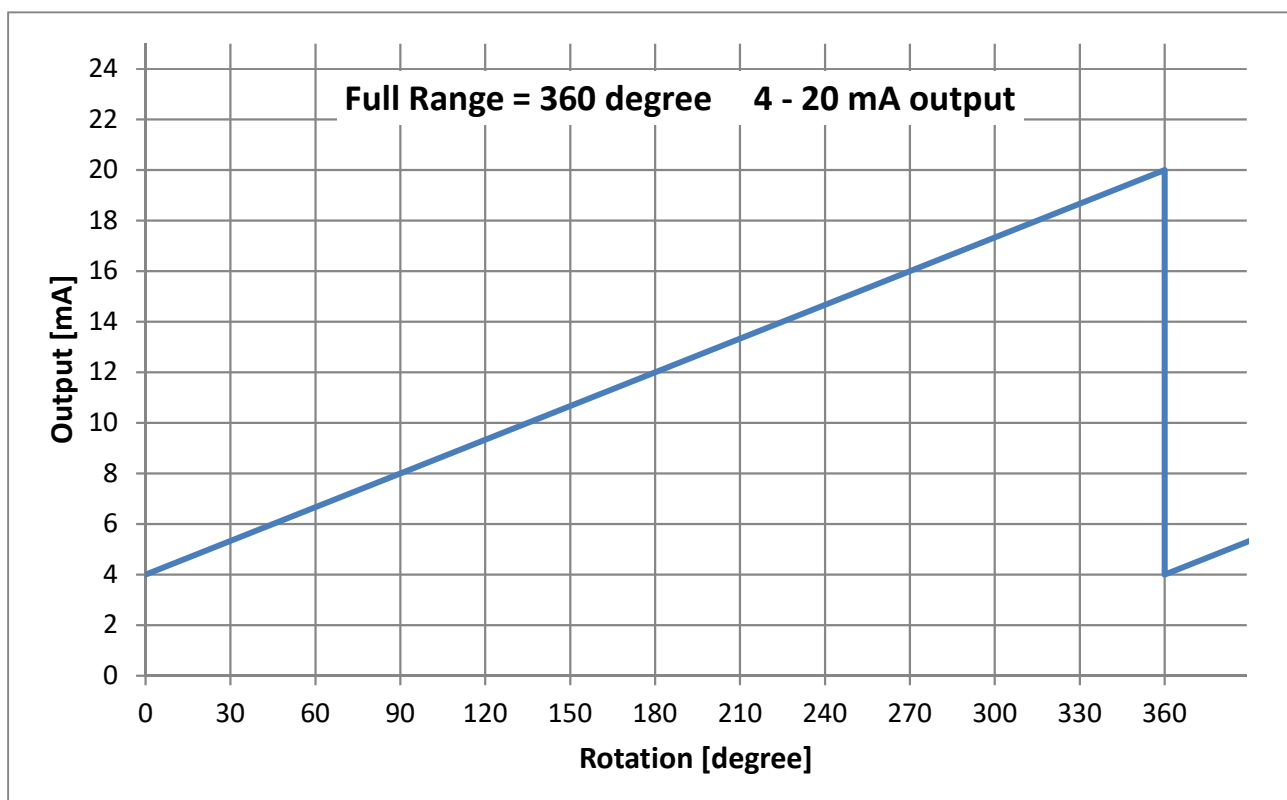
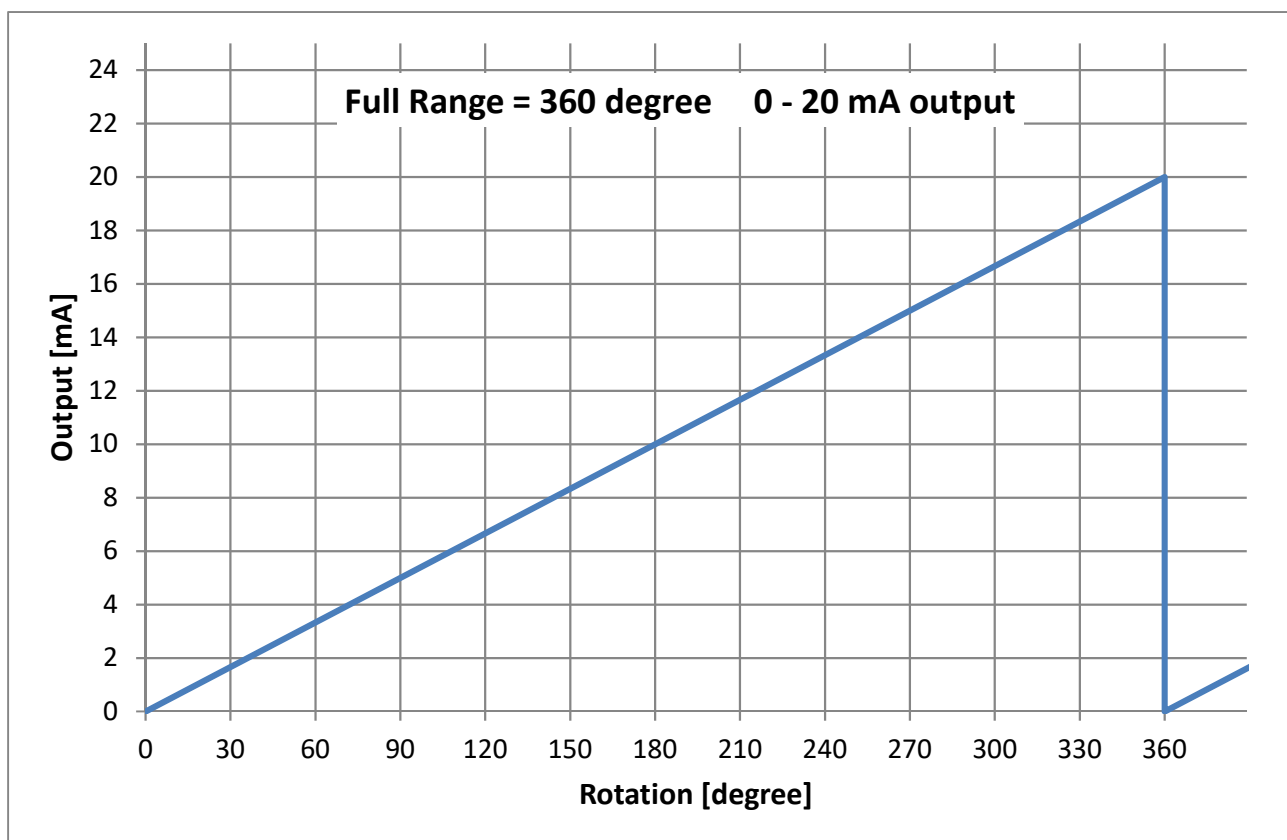
mm (inches)

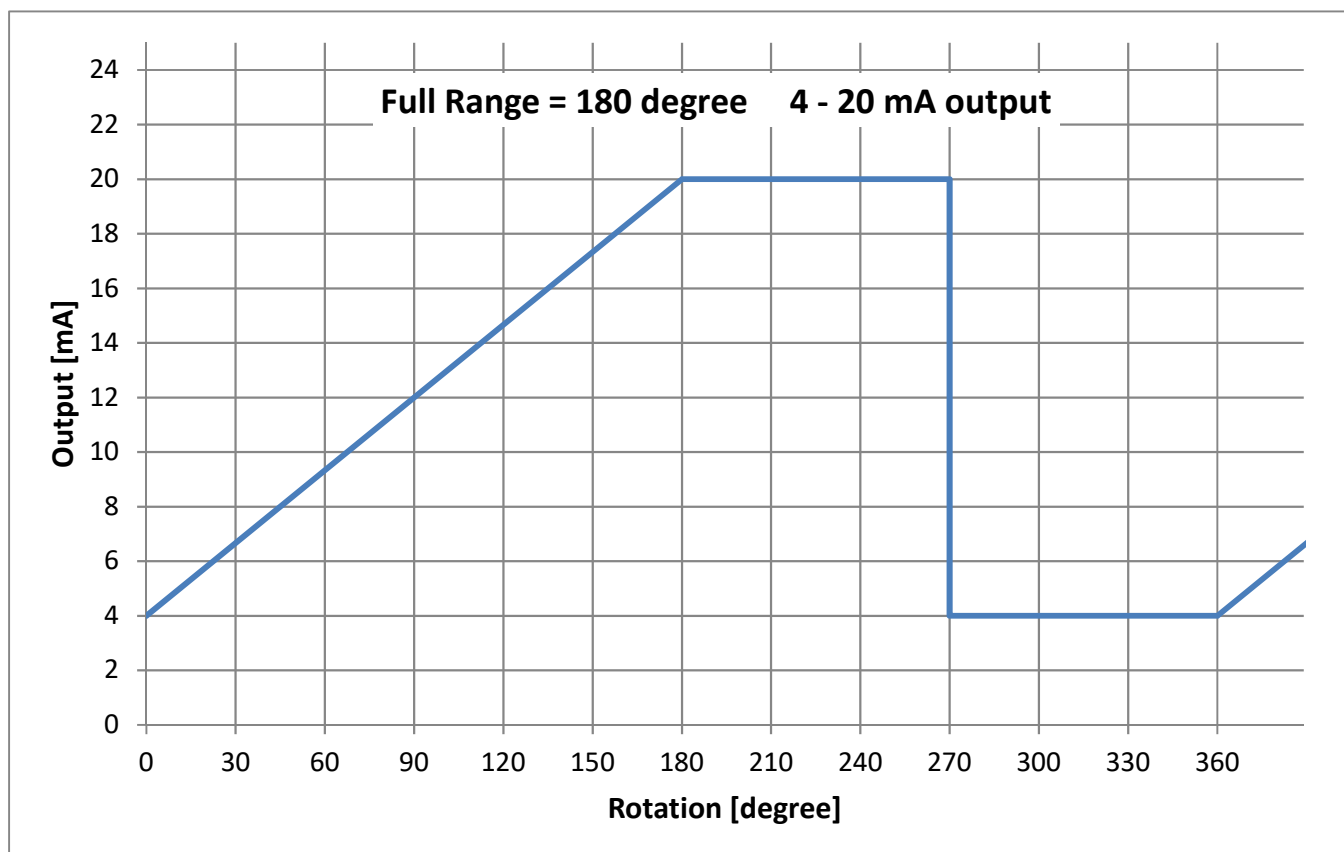
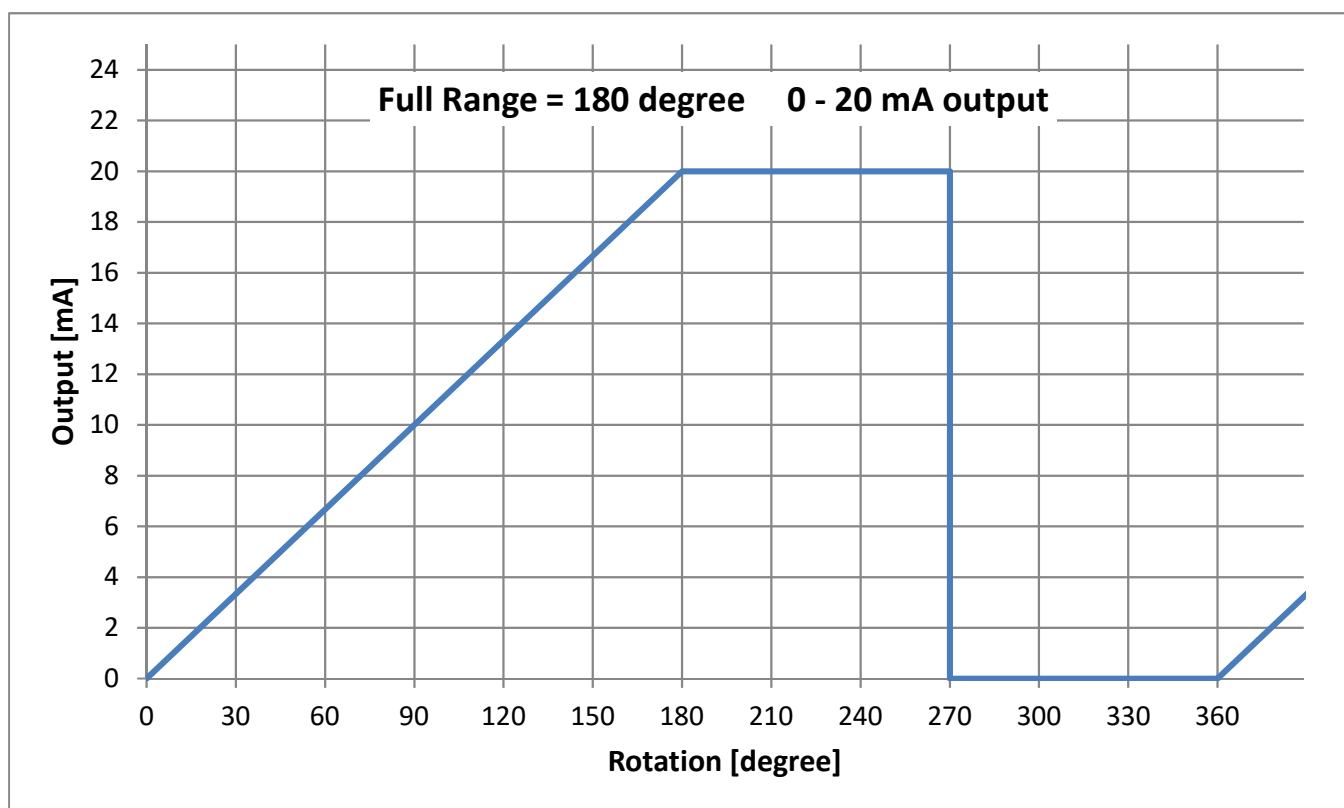
## Output Terminations

| Cable Connections |             |                                    |
|-------------------|-------------|------------------------------------|
| Cable Colour      | Name        | Function                           |
| Red               | Vsup        | Positive Supply Voltage            |
| Green             | Iout        | Current Output                     |
| Black             | GND         | Circuit Ground – Current Reference |
| White             | Not Used *) | ---                                |

\*) Can be left unconnected or cut off

## Output Waveforms





## Ordering Code

**Example: SCH24AC – 360 – 12 – C4 – 04 – 14 – 64 – 01 – S – S1**

## Type

| SCH24AC                    |                | -      |                | -            |                     | -            |                       | -               | 14 | - | 64 | - |  | - |  | - |  |
|----------------------------|----------------|--------|----------------|--------------|---------------------|--------------|-----------------------|-----------------|----|---|----|---|--|---|--|---|--|
| Range                      | Supply Voltage | Output | Shaft Dia.     | Shaft Length | IP Rating           | Cable Length | Cable Takeout         | Spring Coupling |    |   |    |   |  |   |  |   |  |
| Full range over 360°       | 360            |        |                |              | IP 64               |              |                       |                 |    |   |    |   |  |   |  |   |  |
| Full range over 180°       | 180            |        |                |              |                     |              |                       |                 |    |   |    |   |  |   |  |   |  |
| Supply Voltage 12 – 18 Vdc | 12             |        |                |              |                     |              | Side (radial)         | S               |    |   |    |   |  |   |  |   |  |
| Supply Voltage 20 - 28 Vdc | 24             |        |                |              |                     |              | Back (axial)          | B               |    |   |    |   |  |   |  |   |  |
| Current 0 – 20mA           |                | C0     |                |              | Standard is 1 meter | 01           |                       |                 |    |   |    |   |  |   |  |   |  |
| Current 4 – 20mA           |                | C4     |                |              | Specify length      | XX           |                       |                 |    |   |    |   |  |   |  |   |  |
|                            |                |        | 2,0 mm x 14 mm | 02           | -                   | 14           | 2 points p/n 80139791 | S1              |    |   |    |   |  |   |  |   |  |
|                            |                |        | 3,0 mm x 14 mm | 03           | -                   | 14           | 2 points p/n 80137434 | S2              |    |   |    |   |  |   |  |   |  |
|                            |                |        | 4,0 mm x 14 mm | 04           | -                   | 14           | No Spring Coupling    | 00              |    |   |    |   |  |   |  |   |  |
|                            |                |        | 5,0 mm x 14 mm | 05           | -                   | 14           |                       |                 |    |   |    |   |  |   |  |   |  |
|                            |                |        | 6,0 mm x 14 mm | 06           | -                   | 14           |                       |                 |    |   |    |   |  |   |  |   |  |
|                            |                |        | ¼ inch x 14 mm | 1/4          | -                   | 14           |                       |                 |    |   |    |   |  |   |  |   |  |

**Other options on request:**  
Please contact Scancon A/S