

**Serie S**  
**Series S**



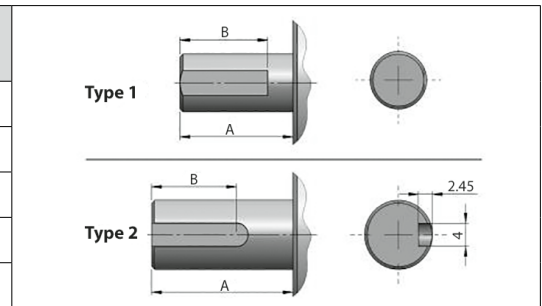
**Absoluter Drehgeber**  
**mit Parallel- oder Analog-Schnittstelle (ø58mm)**  
**Absolute encoder**  
**with parallel or analogue interface (ø58mm)**

**Mechanische Daten / Mechanics Data**

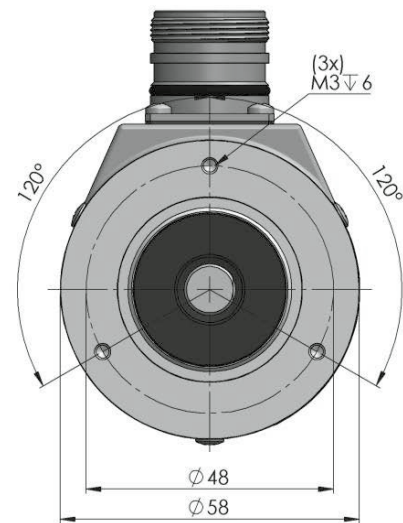
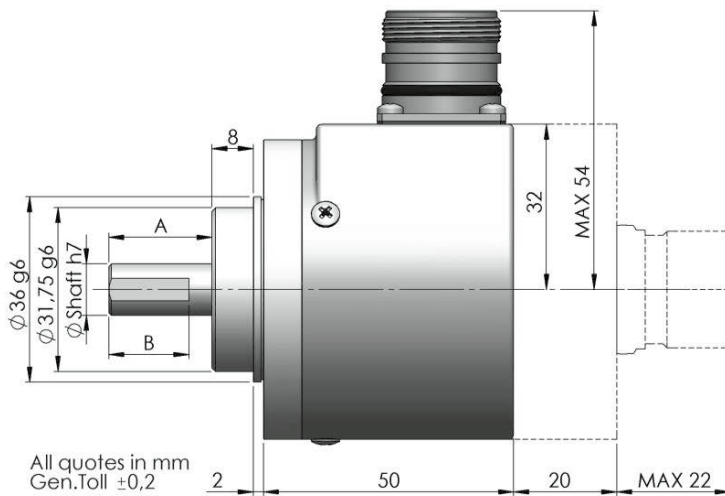
|                                  |                                |
|----------------------------------|--------------------------------|
| Haube / Cover:                   | Aluminium / Aluminum           |
| Flansch / Body:                  | Aluminium / Aluminum           |
| Welle / Shaft:                   | Edelstahl / Stainless steel    |
| Kugellager / Bearings:           | doppelt gelagert / 2 ballraces |
| Gewicht / Weight:                | 300 g                          |
| IP Schutzart / IP Protection:    | IP65                           |
| Umdrehungen / RPM:               | max. 6000                      |
| Drehmoment / Torque:             | 5Ncm                           |
| Trägheitsmoment / Inertia:       | 100gcm <sup>2</sup>            |
| Wellenbelastung / Shaft Loading: | Axial 100N – Radial 100N       |



| Welle / Shaft |          |          |      |
|---------------|----------|----------|------|
| ø             | A        | B        | Type |
| 6,00 mm       | 10,00 mm | 9,00 mm  | 1    |
| 8,00 mm       | 20,00 mm | 15,00 mm | 1    |
| 10,00 mm      | 20,00 mm | 15,00 mm | 1    |
| 12,00 mm      | 25,00 mm | 15,00 mm | 2    |

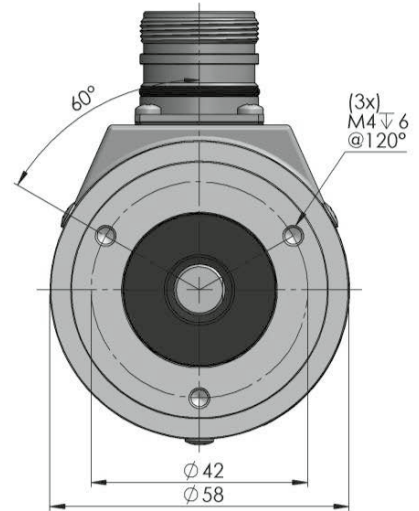
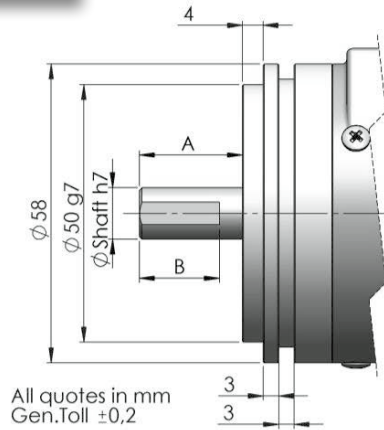


**Flansch 1 / Flange 1**

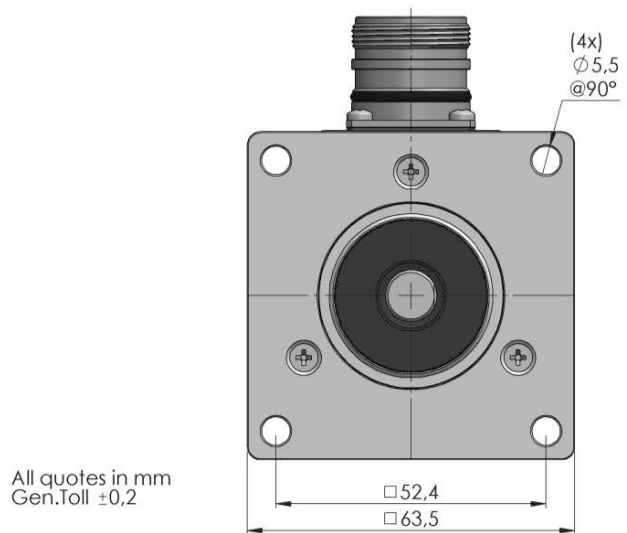
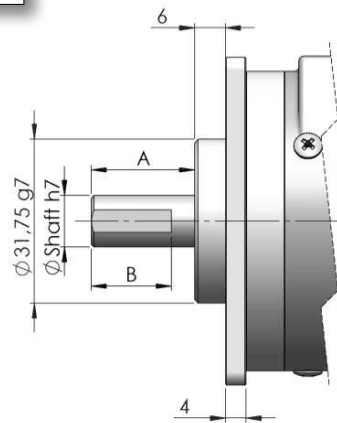


Alle Bilder sind Beispielbilder und können nicht als verbindlich eingestuft werden  
All images are indicative and can not be considered binding the purpose of supplying

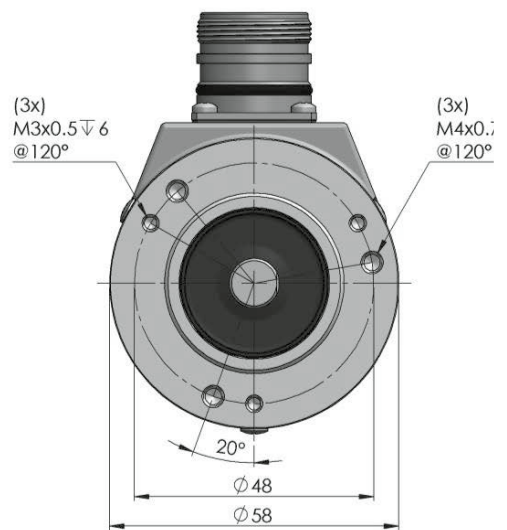
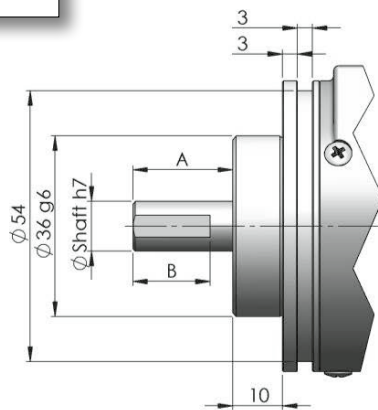
## Flansch 3 / Flange 3



## Flansch 6 / Flange 6



## Flansch H / Flange H



### Elektronische Daten / Electronics Data

Versorgungsspannung / Power supply:  
max. Stromaufnahme / Current consumption:  
Ausgang / Output:

max. Ausgangsbelastung / Permissible load:  
Frequenz / Frequency:  
Schutz / Protections:  
Betriebstemperatur / Operating Temp.:

5/24V, hängt von der Ausgangsschaltung ab / depends on the electronics circuit  
max 100mA  
Parallel: Gray-Binär-BCD / Parallel: Gray-Binary-BCD  
Analog/Analogue : 4-20mA / 0-10V (14bit)  
40mA  
50KHz (LSB)  
Kurzschlussfest, Umkehrpolarität / gainst short circuit, reversal polarity  
-20/+70°C

### Bestellbezeichnung / Ordering Code

| S | *  | *   | *  | *  | *   | / | **  |  |
|---|--|---|--|--|---|---|---|--|
|   | Welle Shaft                              | Flansch Flange                              | Ausgangsschaltung Output   | Optionen Options   | Anschluss Connections   |   | Auflösung Resolution  |  |
|   |  |   | <b>Digitalausgang max. 13 Bit (8.192) / Digital output max 13 bit (8.192)</b>  |  |   |   |   |  |
|   |  |   | 1 = GRAY NPN 11/24V<br>2 = GRAY Push-Pull 11/24V<br>3 = GRAY TTL 5V<br>4 = BIN. NPN 11/24V<br>5 = BIN. Push-Pull 11/24V<br>6 = BIN. TTL 5V<br>7 = BCD NPN 11/24V<br>8 = BCD Push-Pull 11/24V<br>9 = BCD TTL 5V | A = None<br>B = Open Coll.<br>E = GRAY Excess<br>S = Strobe  | <b>Kabel / Cable</b><br>9 = Cable Axi<br>3 = Cable Rad<br><br><b>SUB-D 25p</b><br>N = 9413 Axi<br>R = 9413 Rad<br><br><b>M23 12p/16p</b><br>2 = 9416/9426 Axi<br>5 = 9416/9426 Rad<br>(zweite Option auf Anfrage / 2nd option on request) |   | Max 8.192<br><br><b>360</b> = 360<br><b>1.024</b> = 1.024<br><b>4.096</b> = 4.096<br>...  |  |
|   | 3 = ø 6 mm<br>6 = ø 8 mm<br>1 = ø 10 mm  | 1<br>3<br>6<br>H                            | <b>Digitalausgang max. 17 Bit (131.072) / Digital output max 17 bit (131.072)</b>  |  |   |   |   |  |
|   | Auf Anfrage / On request:<br>2 = ø 12 mm | Siehe vorherige Seiten / See previous pages | 2 = GRAY Push-Pull 11/24V<br>3 = GRAY TTL 5V<br>5 = BIN. Push-Pull 11/24V<br>6 = BIN. TTL 5V   | A = None<br>S = Strobe<br>Z = Preset<br>(Druckknopf auf dem Gehäuse / push button on cover)  | <b>SUB-D 25p</b><br>N = 9413 Axi<br>R = 9413 Rad  |   | Max 17 bit<br><br><b>12C</b> = 4.096<br><b>13C</b> = 8.192<br>...<br><b>17C</b> = 131.072   |  |
|   |  |   | <b>Analog Ausgang Auflösung 14 Bit / Analog output resolution 14 bit</b>   |  |   |   |   |  |
|   |  |   | C = 4 - 20 mA<br>D = 0 - 10 V<br><br>Versorgungsspannung/<br>Power Supply<br>24 V  | A = None<br>Z = Preset<br>(Druckknopf auf dem Gehäuse / push button on cover)<br>W = Voreinstellung am Stecker oder Kabel / Preset on connector or cable | <b>M23 12p/16p</b><br>2 = 9416 Axi<br>5 = 9416 Rad<br><br><b>M12 5p</b><br>J = 94M12 Axi<br>K = 94M12 Rad   |   | <b>R1</b> = 1 Ramp/Umdrehung<br>1 ramp/turn<br><b>R2</b> = 2 Ramp/Umdrehung<br>2 ramps/turn<br><b>R4</b> = 4 Ramp/Umdrehung<br>4 ramps/turn |  |

| <b>Parallel Digitalausgang / Parallel Digital output</b>   |   |            |
|--|---|------------|
| Drehgebereingänge sind intern logisch mit Pegel „ONE“ verbunden / Encoder inputs are internally logically connected to level logical „ONE“ |   |            |
| Standard Input   |   |            |
|  | <b>Open or Vcc</b>  | <b>GND</b> |
| <b>UP/DOWN</b>   | UP (CW)   | DOWN (CCW) |
| Optional Input   |   |            |
|  | <b>Open or Vcc</b>  | <b>GND</b> |
| <b>PRESET</b>  | Um den Preset durchzuführen, Position 0 für min. 50 msec mit GND verbinden /<br>To preset encoder, connect position 0 to GND for min. 50 msec |            |

| <b>Anschlüsse / Connections</b> |         |        |       |       |       |        |      |        |        |             |           |            |             |              |              |              |
|---------------------------------|---------|--------|-------|-------|-------|--------|------|--------|--------|-------------|-----------|------------|-------------|--------------|--------------|--------------|
| Stecker/Connector               | 0 Volt  | + Volt | 0 2   | 1 2   | 2 2   | 3 2    | 4 2  | 5 2    | 6 2    | 7 2         | 8 2       | 9 2        | 10 2        | 11 2         | M            | DIR <->      |
| <b>9416 12p</b>                 | P1      | P2     | P3    | P4    | P5    | P6     | P7   | P8     | P9     | P10         | P11       |            |             |              |              | P12          |
| <b>9426 16p</b>                 | P1      | P2     | P3    | P4    | P5    | P6     | P7   | P8     | P9     | P10         | P11       | P12        | P13         | P14          | P15          | P16          |
| <b>9413 25p</b>                 | P1      | P2     | P3    | P4    | P5    | P6     | P7   | P8     | P9     | P10         | P11       | P12        | P13         | P14          | P15          | P16          |
| Kabel / Cable                   | SCHWARZ | BLAU   | BRAUN | BEIGE | GRÜN  | GELB   | ROSA | LILA   | ORANGE | TRANSPARENT | WEISS ROT | WEISS BLAU | GRÜN WEISS  | LILA WEISS   | GELB GRÜN    | GELB WEISS   |
|                                 | BLACK   | BLUE   | BROWN | BEIGE | GREEN | YELLOW | PINK | VIOLET | ORANGE | TRANSPARENT | WHITE RED | WHITE BLUE | GREEN WHITE | VIOLET WHITE | YELLOW GREEN | YELLOW WHITE |

M = Optionaler Ausgang

DIR <-> Drehrichtung (im bzw. gegen den Uhrzeigersinn): Im Uhrzeigersinn ist Standard, gegen den Uhrzeigersinn DIR <-> bis 0 Volt.

M = Optional output

DIR <-> Signal direction (clockwise or anticlockwise): Clockwise is standard, anticlockwise connect DIR <-> to 0 Volt.

| Analog Ausgang / Analog Output |   |            |
|--------------------------------|---|------------|
| Standard Input                 |   |            |
|                                | Open or Vcc   | GND        |
| UP/DOWN                        | UP (CW)   | DOWN (CCW) |
| Optional Input                 |   |            |
|                                | Open or Vcc   | GND        |
| PRESET                         | Um den Preset durchzuführen, Position 0 für min. 50 msek mit GND verbinden /<br>To preset encoder, connect position 0 to GND for min. 50 msec |            |

| Anschlüsse / Connections |  |                                      |                |
|--------------------------|--|--------------------------------------|----------------|
|                          | Stecker 9416 (M23 12p)<br>Connections 9416 (M23 12p) | Stecker M12 5p<br>Connections M12 5p | Kabel<br>Cable |
| 0V                       | 1  | 1                                    | Weiß / White   |
| +24VDC                   | 2  | 2                                    | Braun / Brown  |
| Iout+ (4-20mA)           | 3  | 3                                    | Grün / Green   |
| Vout + (0-10V)           | 5  | 3                                    | Grün / Green   |
| Preset                   | 8  | 4                                    | Gelb / Yellow  |
| Ud/Down                  | 7  | 5                                    | Grau / Gray    |

