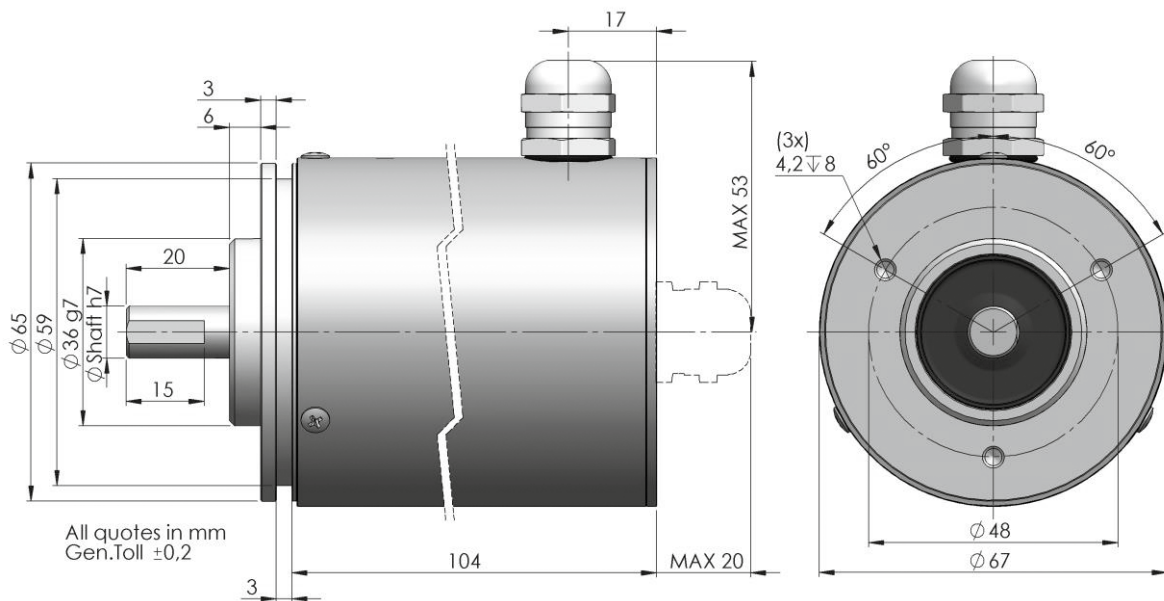
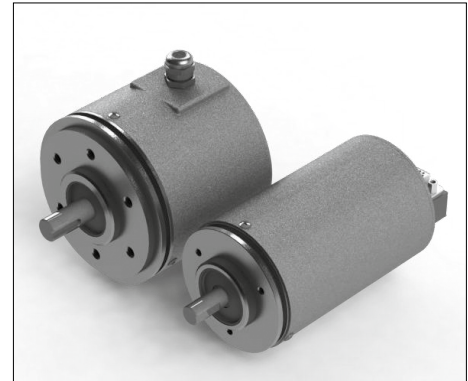


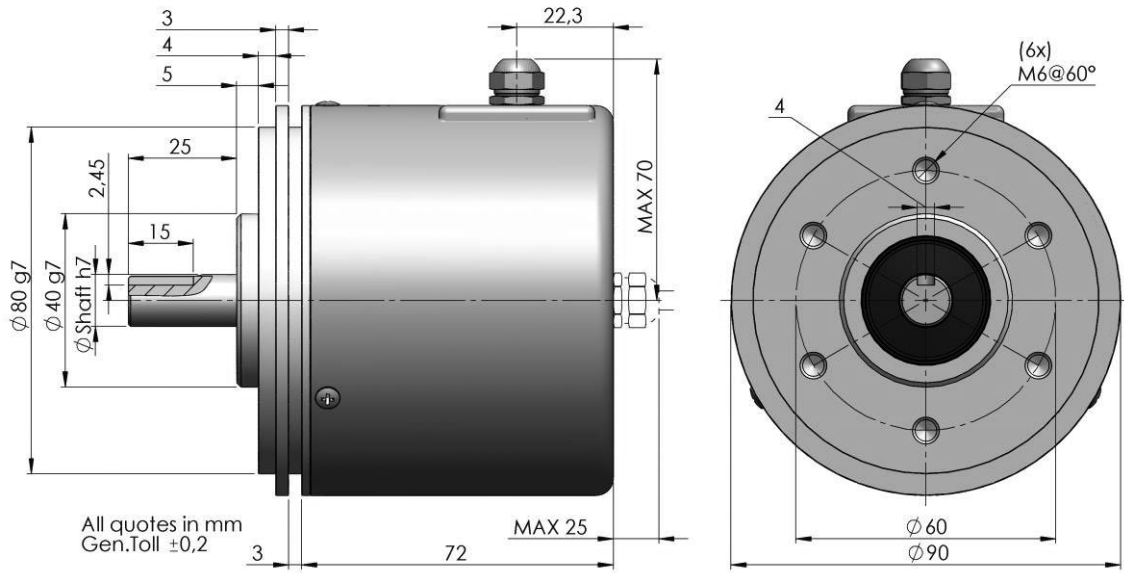
Serie MM & TM
Series MM & TM

Absoluter Drehgeber
mit Parallel- oder Analog-Schnittstelle (Ø 65 mm und Ø 90 mm)
Absolute rotary encoder
with parallel- or analog interface (Ø 65 mm and Ø 90 mm)

Mechanische Daten / Mechanical Data

| | |
|----------------------------------|--------------------------------|
| Haube / Cover: | Aluminium |
| Flansch / Body: | Aluminium |
| Welle / Shaft : | Edelstahl / Stainless steel |
| Kugellager / Bearings: | doppelt gelagert / 2 ballraces |
| Gewicht / Weight: | 500 g (MM), 800 g (TM) |
| IP Schutzart / IP Protection: | IP65 |
| Umdrehungen / RPM: | max. 3000 |
| Drehmoment / Torque: | < 0.5Ncm |
| Trägheitsmoment / Inertia: | 100gcm ² |
| Wellenbelastung / Shaft Loading: | Axial 50N – Radial 50N |





Elektronische Daten / *Electronical Data*

| | |
|--|---|
| Versorgungsspannung / <i>Power supply:</i> | 10-30 V (5 V auf Anfrage / <i>on request</i>) |
| max. Stromaufnahme / <i>Current consumption:</i> | max. 300 mA |
| Auflösung / <i>Resolution:</i> | max. 28 Bit (ST max. 17 Bit; MT max 16 Bit) |
| Ausgang / <i>Output:</i> | Gray/binär wählbar <i>Gray / binary selectable</i> |
| Max. Ausgangsbelastung / <i>Permissible load:</i> | 40 mA |
| Frequenz / <i>Frequency:</i> | 50 kHz (LSB) |
| Schutz / <i>Protections:</i> | kurzschlussfest, Umkehrpolarität <i>against short circuit, reversal polarity</i> |
| Betriebstemperatur / <i>Operating temperature:</i> | -20°C / +70°C |

Bestellbezeichnung / *Ordering Code*

| ** | * | * | * | * | / | ****/**** | |
|--|--|---|--|---|---|-------------------------------|---|
| | Welle / <i>Shaft</i> | Ausgang / <i>Output</i> | Anschlüsse / <i>Connections</i> | Optionen/ <i>Options</i> | | Auflösung / <i>Resolution</i> | |
| MM = Ø 65 mm TM = Ø 90 mm | 1 = Ø 10 mm 2 = Ø 12 mm (TM) | Paralleler Digitalausgang / <i>Parallel Digital Output</i> | | | | | ST / MT Ex: 4096/4096 ST MAX 131072 MT MAX 65536 |
| | | 1 = Push Pull 11/24 Volt 2 = TTL 5 Volt | 3 = Cable Rad 9 = Cable Axi 1 = 9444 Axi 2 = 9444 Rad | 0 = None L = Latch T = Tristate S = Strobe | | | |
| | | Analog Ausgang / <i>Analog Output</i> | | | | | STbit / MTbit (max. 14 bit) |
| | | C = 4 - 20 mA (14 bit) M = 4 - 20 mA /0 - 10V (14 bit) D = 0 - 10 Volt (14 bit) | M23 12p 5 = 9416 2 = 9416 | 0 = None | | | |
| | | Programmierbarer Analog Ausgang / <i>Programmable Analog Output</i> | | | | | PRO1 (max 4096 turns) PRO3 (max. 16384 turns) |
| | | C = 4 - 20 mA (14 bit) D = 0 - 10 Volt (14 bit) | M23 12p 5 = 9416Rad 2 = 9416Ass | P = programmierbar** <i>programmable**</i> | | | |

Paralleler Digitalausgang / *Parallel Digital Output*

Encoder-Eingänge sind intern mit der logischen Ebene „EINS“ verbunden / *Encoder inputs are internally connected to level logical „ONE“*

Standard Eingang / *Standard Input*

| | Open or VCC | GND |
|--|--|---|
| UP/DOWN | UP (CW) | DOWN (CCW) |
| Optionaler Eingang / <i>Optional Input</i> | | |
| | Open or VCC | GND |
| GRAY / BINARY | GRAY | BINARY |
| LATCH | Standard Daten / <i>Standard data</i> | Daten gespeichert und konstant bei der Ausgabe / <i>Data stored and constant at output</i> |
| TRISTATE | Hohe Impedanz / <i>High impedance</i> | Ausgänge aktiv / <i>Outputs active</i> |

** Programmierbarer Analog Ausgang / *Programmable Analog Output*

Programmierbare Version: Stellen Sie die analoge Position 4 mA oder 20 mA (oder 0 und 10V) mit den Druckknöpfen ein /
Programmable version: Set analog position 4 mA or 20 mA (or 0 and 10 V) with push button

Anschlüsse / Connections

| Paralleler Digitalausgang / Parallel Digital Output | | | | | | | | | | | | | |
|---|-------------|--------|---------|------|------|------|------|-------|------|-----------|------|--------|------|
| Connector 9444 (SUB-D 44p) | 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 |
| | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | P13 |
| | 11 1 | 12 2 | 13 2 | 14 2 | 15 2 | 16 2 | 17 2 | 18 2 | 19 2 | 20 2 | 21 2 | 22 2 | 23 2 |
| | P14 | P15 | P16 | P17 | P18 | P19 | P20 | P21 | P22 | P23 | P24 | P25 | P26 |
| | GRAY BINARY | | UP DOWN | | | | | LATCH | | TRI-STATE | | PRESET | |
| | P38 | | P39 | | | | | P42 | | P43 | | P44 | |

| Analoger Ausgang / Analog Output | | |
|----------------------------------|--|---------------|
| | Stecker 9416 (M23 12p) / Plug 9416 (M23 12p) | Kabel / Cable |
| 0 V | 1 | Weiß / White |
| +24 V DC | 2 | Braun / Brown |
| I out + (4 - 20 mA) | 3 | Grün / Green |
| V out + (9 - 10 V) | 5 | Gelb / Yellow |
| Up / Down | 7 | Grau / Gray |