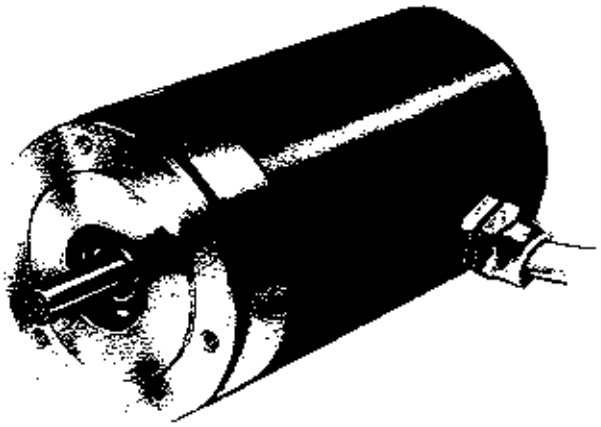


MULTITURN SHAFT ENCODER Model CM 65 absolute/electro-optical

- For the conversion of long range displacements into digital counts
- Gray code format
- Resolution up to 1024 counts per 360°
- Number of revolutions up to 256
- Total capacity up to 262,144 counts (18 bit)
- Compact, heavy duty configuration

TWK

Constructional features

Anodized aluminium housing with O-ring sealings - Stainless steel shaft (8 mm dia) - Sealed ball bearings - Multi-stage code gear - Sealed cable exit - Plastic code discs - Gallium-Arsenide-diodes - Phototransistors followed by trigger and comparator circuitry.

Functional features

The code disc of the first stage is directly fixed to the input shaft. Its resolution is either 256 or 1024 counts per 360°. A multi-stage gear comprising one code disc each stage allows to accept up to 256 revolutions of the input shaft which brings the total capacity to 256 x 1024 = 262,144 counts (18 bit).

Optional features

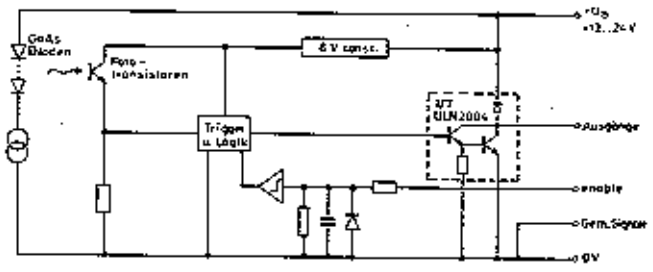
- Connector fitted to the rear of housing
- 12 or 14 mm shaft dia
- TTL-output circuit

Standard types

CM 65-088: 256 counts per 360° x 256 revolutions = total capacity of 65,536 counts (16 bit)

CM 65-108: 1024 counts per 360° x 256 revolutions = total capacity of 262,144 counts (18 bit)

Basic circuitry



Electrical specification

- Light sources:	GaAs-diodes
- Output circuitry:	Phototransistors, trigger, comparator, open collector, positive logic (ULN 2004) Umax. = Ub, Imax. = 50 mA
- Output level:	log 1 = Umax., log 0 1,1 V
- Read-out frequency:	8 kHz max.
- Code direction:	Upward count when turning CCW, can be inverted by external strap.
- Supply voltage:	+ 12 to + 24 VDC
- Current requirement:	165 mA
- Enable circuit for bus operation:	All output circuits are activated when applying 0 to + 5 V or when contacts are not connected. They are closed at +12V to +24V

Mechanical specification

- Slewing speed:	3000 rpm (permanently) 4000 rpm (intermittently)
- Starting torque:	5 Ncm
- Inertia:	150 gcm²
- Shaft load max.:	200 N axial and radial
- Useful life of bearings:	10^9 at max. load and max. speed
- Operating temperatures:	- 5°C to 60°C
- Storage temperature:	- 25°C to 70°C
- Vibration:	5 Hz to 1000 Hz/10 g
- Shock:	20 g/11 ms
- Weight:	0.7 kg
- Environmental protection:	IP 65 (dust and water)
- Connector type:	DB 25 P fitted at cable end (protection IP 30)

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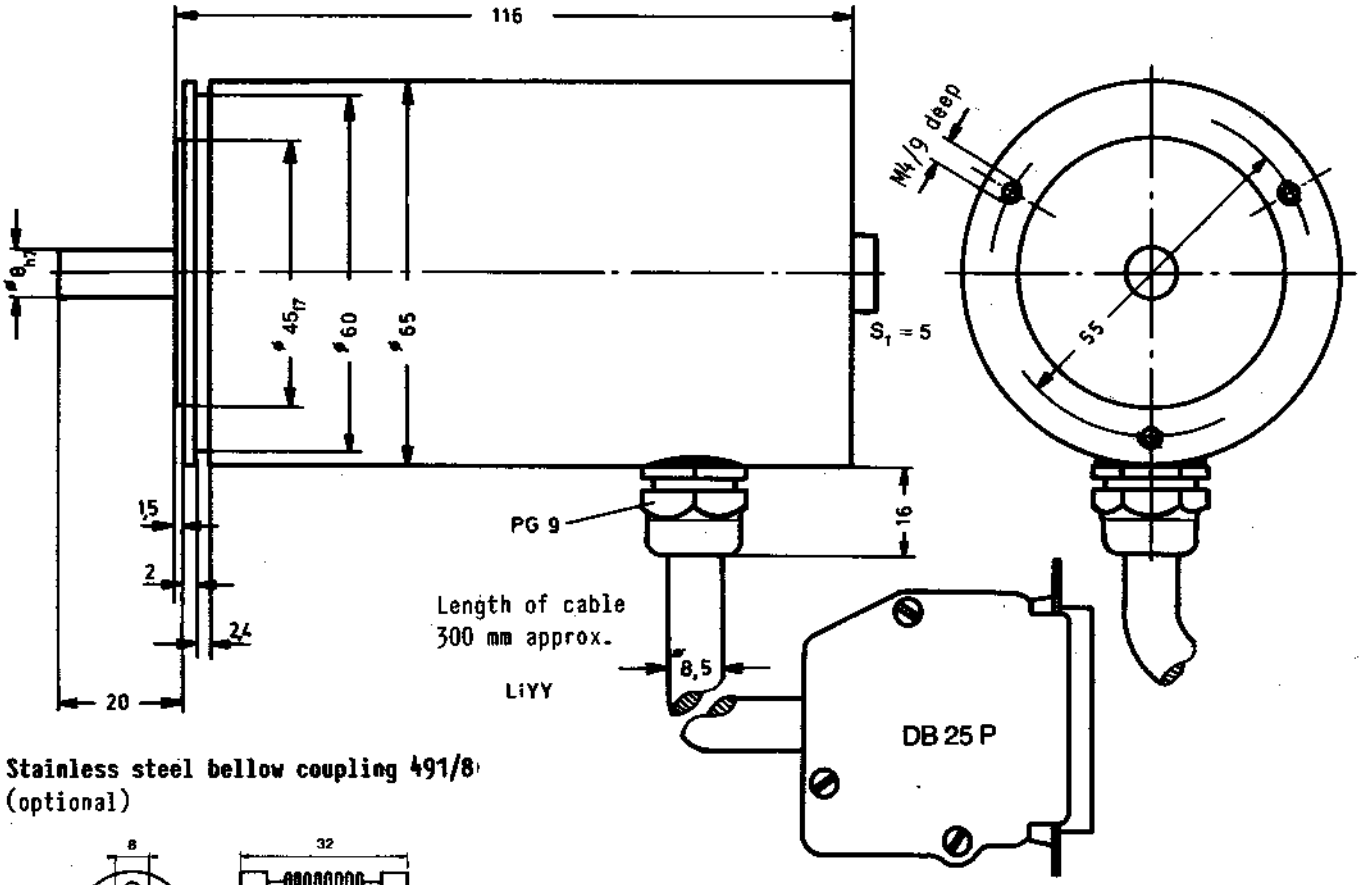
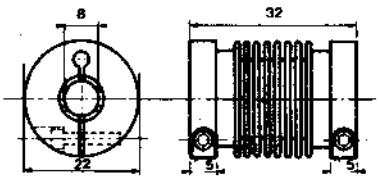
Dimensions in mm



Stainless steel bellow coupling 491/8
(optional)



Mating plug DB 25 S with
plastic covers supplied w/o request

Ordering code

CM 65 - 088 G - 00 — Non-standard type to specifiation (2-figure suffix)

- Gray code
- No of revolutions (max)
  $8 = 2^8 = 256$
- Resolution: counts / 360°
  08=8 bit=256 / 10=10 bit=1024
- Basic model

Notes: 1) Decoding PC-board Gray into Binary is available upon request (Data Sheet 2384EA)

2) Singleturn Model CA 65 with same mechanical configuration features 100 to 1024 counts per revolution (Data Sheet 21065 EA).

Zero-point adjustment

In order to adjust the zero-point when the encoder is fixed and coupled to its driving shaft the hex socket head screw at the rear cover is to be retracted. A screwdriver can now be inserted into the housing and the code discs can be mechanically adjusted with respect to the position of the input shaft of the encoder.