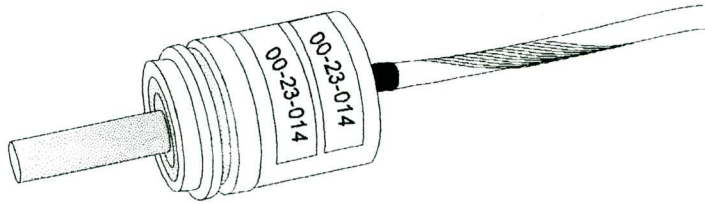


# MINIATURE ROTARY ENCODERS TGR22

Optoelectronic

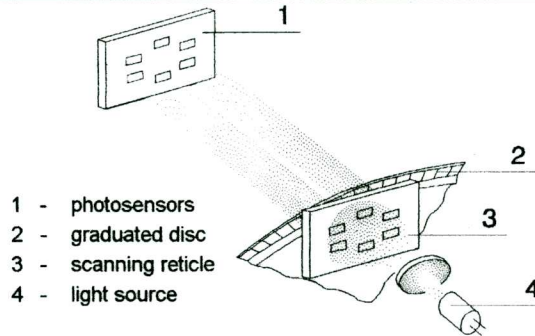


## GENERAL DESCRIPTION:

The miniature rotary encoders TGR 22 transform mechanical rotation to a series of electrical pulses. Operating principle shown in drawing right. Periodic signals of approximate sines-wave shape are generated on the photosensors via photoelectric scanning.

**Number of lines:** 250 to 256  
**Diameter:** 22 mm  
**Output signals:** square wave signals

## OPERATING PRINCIPLE:



- 1 - photosensors
- 2 - graduated disc
- 3 - scanning reticle
- 4 - light source

## MECHANICAL DATA:

Number of lines	25, 100, 180, 250, 256 (other line number on special order)
Shaft loading	axial: $\leq 5\text{N}$ radial: $\leq 10\text{N}$
Rotor inertia moment	$\leq 7 \times 10^{-8} \text{ Nms}^2$
Starting torque at 20°C	$\leq 0.003 \text{ Nm}$
Life time of bearings	$10^9$ revolutions
Max number of revolutions	$\leq 10.000 \text{ min}^{-1}$
Max. cable length	10 m
Weight	30 g

## OPERATING CONDITIONS:

Operating temperature	-40°C to 85°C
Storage temperature	-55°C to 100°C
Relative humidity	max 98%
Sealing (by DIN 40050 B1.1)	IP50 or IP64
Shocks	20 G, 11 ms
Admissible vibrations	10 G, 5-2000 Hz

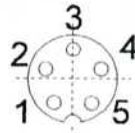
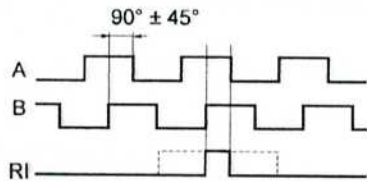
## ELECTRICAL DATA:

Supply voltage	5 V or 12 V
Power consumption	max. 40 mA (no load)
Output signal frequency	max. 50 kHz per channel
Phase shift between channels	$90^\circ \pm 45^\circ \text{ el.}$
Output types	C - open collector T - TTL compatible signals

# MINIATURE ROTARY ENCODERS TGR22

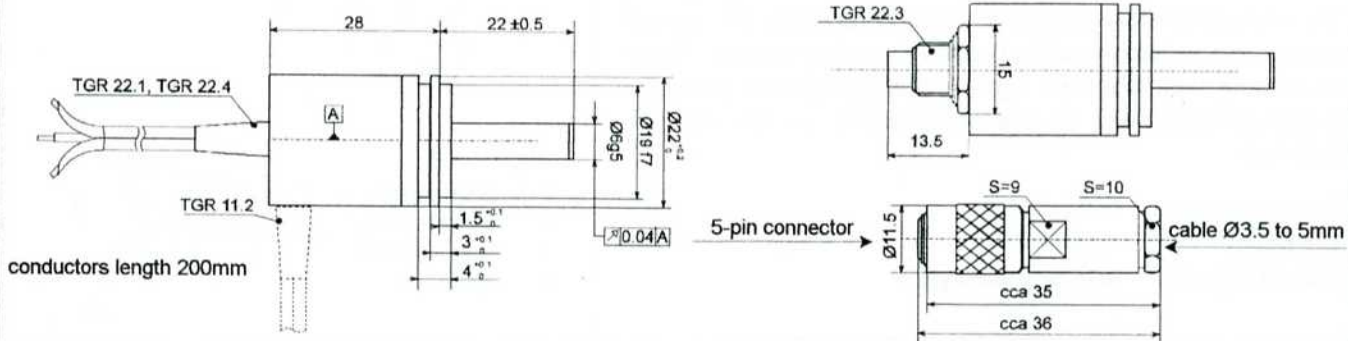
Optoelectronic

## ELECTRICAL DATA:



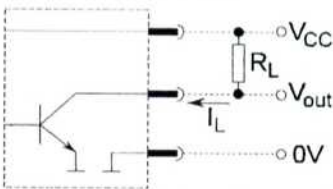
pin	1	2	3	4	5
signal	+V <sub>CC</sub>	B	A	GND	RI (free)
colour	brown	yellow	green	white	grey

## DIMENSIONS:



## OUTPUT CIRCUIT TYPES:

### C open collector

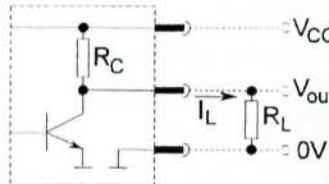


$$V_{OL} \leq 0.4 \text{ V}$$

$$V_{OH} = V_{CC}$$

$$I_{Lmax} = 14 \text{ mA}$$

### T TTL compatible signals



$$V_{OL} \leq 0.4 \text{ V}$$

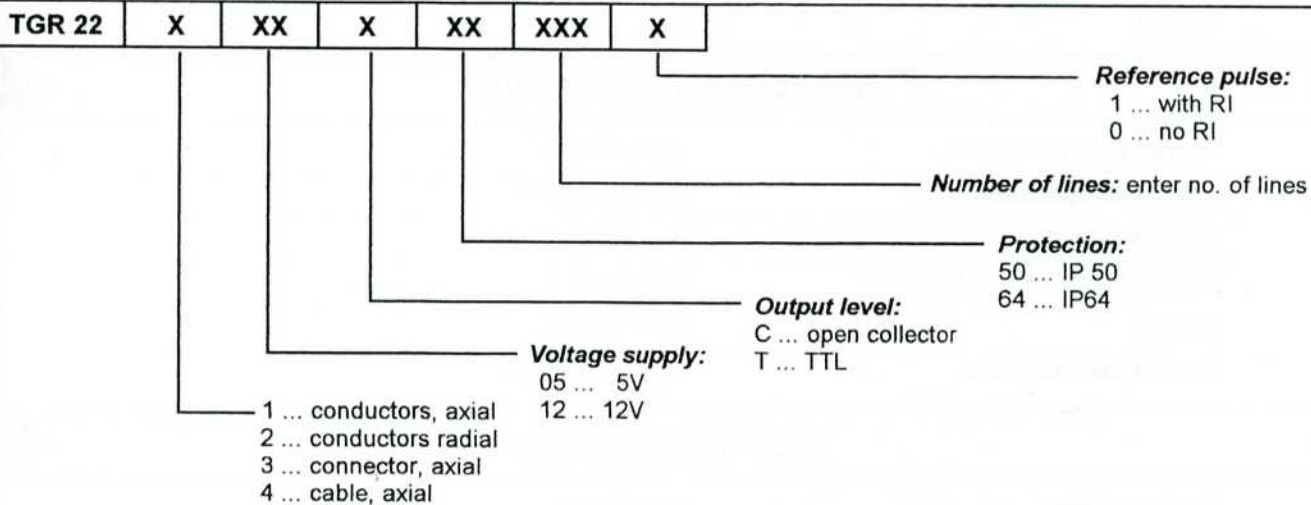
$$V_{OH} = V_{CC} \cdot R_L / (R_C + R_L)$$

$$I_{Lmax} = V_{CC} / R_C \leq 14 \text{ mA}$$

$$R_C = 470 \text{ Ohm (5V)}$$

$$1.2 \text{ kOhm (12V)}$$

## ORDERING DATA:



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GENERALNY DYSTRYBUTOR:

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**AUTOMATYKA**

~ SYSTEMY POMIAROWE ~

~ EDUKACJA TECHNICZNA ~ OBRABIARKI CNC ~

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