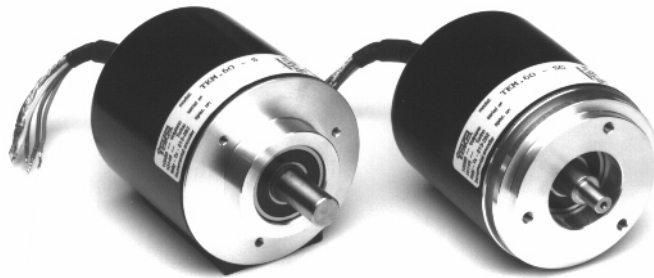


# TKM60P series

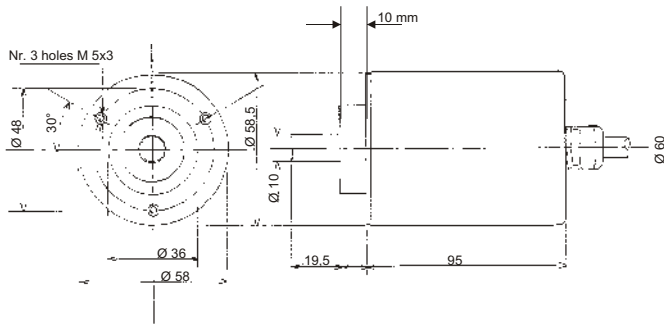
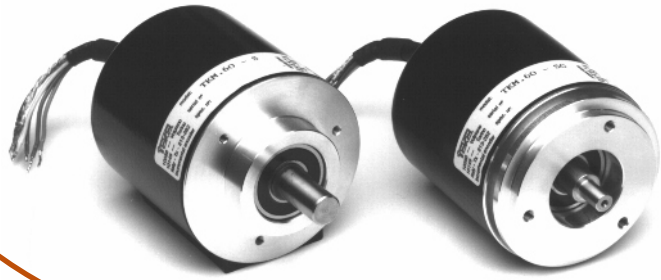


## Main features

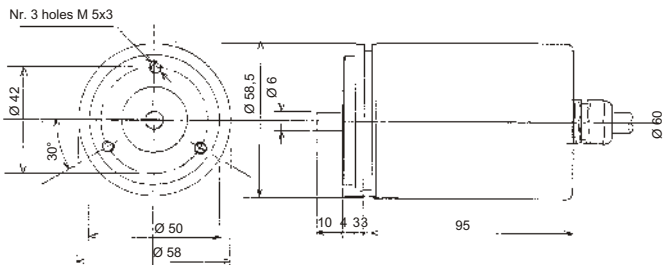
TKM60P programmable version of TKM60 absolute multi-turn.  
The functions (even the optional ones) are all available as software (programmable parameters); the options are based on the presence or absence of the hardware connection regarding the cable or connector signals. The SSI electronic (S1 ÷ S5), and a parallel electronic (00, 20, 21, 22, 23, 30), apart from the serial programmable RS232 or RS485, may coexist on the same encoder.



# TKM60P series



**S = Servo**



**SG = Servo Brackets**

# TECHNICAL DATA SHEET: TKM60P series

## TECHNICAL CHARACTERISTICS

Code	programmable: Gray, Binary, BCD
Standard no. of pulse per resolution	programmable from 2 to 8.192
Number of turn	programmable from 1 to 4.096

## MECHANICAL CHARACTERISTICS

Assembly	<b>SG</b> Servo Brackets <b>S</b> Servo standard <b>T</b> Servo brackets with centering dia 36 mm
Dimensions	See drawings
Mass	0,65 kg
Slewing speed	10.000 rpm for short period; 6.000 rpm for normal operation; 2.000 rpm with shaft seal
Shaft diameter	10 mm - 6 mm
Shaft seal	Available
Starting torque at 25°C	
Ball bearing working life	10 <sup>9</sup> revolutions min.
Shaft loading	Axial 200 N; radial 200 N

## MATERIALS

Mainframe	"Al" thermally stabilised
Housing	"Al" sheet anodised
Shaft	Stainless steel antimagnetic
Light source	GaAsAl infrared light emitting diode MTFB 10 <sup>5</sup> hrs min.

## ENVIRONMENTAL CHARACTERISTICS

Operating temperature	-10 ÷ +70 °C
Storage temperature	-30 ÷ +80 °C
Humidity	Up to 98 % RH without condensation
Protection	<b>K4</b> IP 64 for DIN 40050; <b>K5</b> IP 65 for DIN 40050; <b>K6</b> IP 66 for DIN 40050
Vibrations	10 g (10 ÷ 2000 Hz)
Shock	20 g for 11 ms

## ELECTRICAL CHARACTERISTICS

Voltage supply	5 V ±5 % 11/30 V
Protection	Against polarity reverse (not 5 Vcc)
Frequency range (T=-10°C ÷ + 70°C)	0 ÷ 20 KHz (L.S.B. without error)
Output	<b>00</b> TTL standard (positive logic) only 5 V <b>20</b> PNP 100 mA standard Open collector (positive logic) <b>21</b> PNP 100 mA standard pull-down resistor included (positive logic) <b>22</b> NPN 100 mA standard Open collector (negative logic) <b>23</b> NPN 100 mA standard pull-down resistor included (negative logic) <b>30</b> PUSH-PULL 100 mA (positive logic) <b>Snnx</b> SSI interface (*)

## CONNECTION CONFIGURATIONS

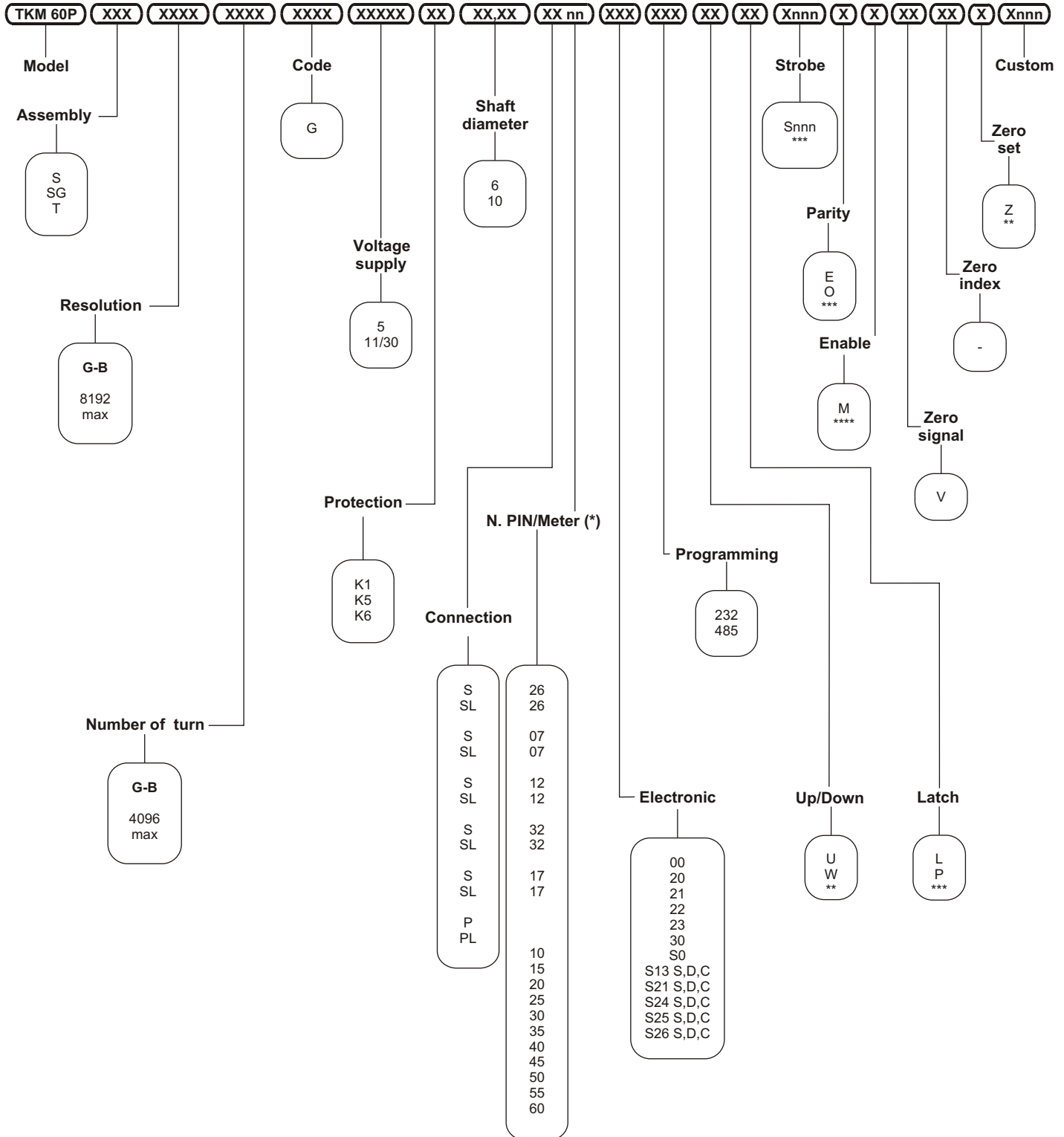
<b>P</b>	axial cable gland with 1÷ 6 m
<b>PL</b>	radial cable gland with 1÷ 6 m
<b>S</b>	on 07, 26, 32 pins axial MIL connector or 12, 17 pins connector
<b>SL</b>	on 07, 26, 32 pins radial MIL connector or 12, 17 pins connector

## OPTIONAL FUNCTIONS

<b>U</b>	Up/Down NPN	<b>S</b>	Strobe	<b>R</b>	Reverse (inverted code)
<b>W</b>	Up/Down PNP	<b>M</b>	Enable NPN	<b>Z</b>	Zero set NPN
<b>L</b>	Latch NPN	<b>E</b>	"Even" or "Even parity"	<b>V</b>	Zero Signal
<b>P</b>	Latch PNP	<b>O</b>	"Odd" or "Odd parity"		

(\*) nn = number of bit that do compose the protocol (13, 21, 24, 25, 26)  
x = bit alignment on the right (D), on the left (S), at center (C)

# Order code: TKM60P series



(\*) 10 = 1,0 m ... 60 = 6,0 m

(\*\*) included in series price

(\*\*\*) unique option which includes always the Latch, Strobe and Parity signal (included always when ordering B binary code); indicate only Snnn, where the 1st and 2nd figure = pulse length in  $\mu$ s the 3rd = multiplier (nr of "0" to be added).  
Example: 201 = 20 x 10 = 200  $\mu$ s; 104 = 10 x 10.000 = 100.000  $\mu$ s

(\*\*\*\*) is always included with electronics 00, 20 and 22

(\*\*\*\*\*) optional