

TK90

solid shaft

Ø 80



Italsensor Quality System certified according to the UNI EN ISO 9001



Features:

TK90- robust incremental optical encoder suitable for different industrial applications, especially in harsh environments.
Thanks to its robust construction and high protection degree this model allows to operate in harsh environments where challenging ambient conditions such as dust, liquids, temperature, shocks and vibrations are available, ensuring high reliability and long service life.

- **robust design for applications in harsh environments ;**
- **high reliability and long service life;**
- **resolution up to 20.000 ppr; others on demand;**
- **high protection degree up to IP66;**
- **cable and connector outputs;**



MECHANICAL SPECIFICATIONS/ CARATTERISTICHE MECCANICHE

Dimensions/ *Dimensioni*

Shaft loading/ *Carico sull'albero*

Shaft Rotation Speed/ *Numero giri*

Starting torque at 25°C/ *Coppia di partenza a 25 °C*

Moment of inertia/ *Momento di inerzia*

Bearing life/ *Vita dei cuscinetti*

Weight/ *Peso*

see drawings/ *vedi disegni*
axial/ *assiale* 200 N; radial/ *radiale* 200 N
12.000 RPM (short cycle time/ *brevi periodi*) 6.000 RPM (continuous/ *continui*)
2.000 turn/min with protection shaft/ *giri/min con asse stagno*
0,025 Nm; 0,040 Nm with proof shaft /*con asse stagno**(1)
40 g cm²
5 x 10⁹ rev. min./ *giri (minimo)*
~ 0,70kg

ELECTRICAL SPECIFICATIONS/ CARATTERISTICHE ELETTRICHE

Resolution/ *Risoluzione*

Power supply/ *Alimentazione*

Output frequency/ *Frequenza in uscita*

Synchronous index output/ *Sincronismo di zero*

Supply current without load/ *Assorbimento in corrente*

Protection/ *Protezione*

20.000 ppr; others on demand/ 20.000 ppr; altri a richiesta
5 V; 24/5 V; 11÷30 V
up to 300 kHz/ *fino a 300 kHz*
on A default, B- A+B optional/ *su canale A predefinito - B- A+B a richiesta*
150 mA max
short circuit protection, no limit duration (only output LD2 and PP2);
against inversion of polarity (except 5V) - available on demand/
contro il cortocircuito (solo elettronica LD2 e PP2);
contro inversione di polarità (escluso 5V) - disponibile su richiesta;

MATERIALS/ MATERIALI UTILIZZATI

Flange/ *Flangia*

Housing/ *Corpo*

Shaft/ *Albero*

aluminum non corroding/ *in alluminio anticorrosione*
Aluminum painted with inhibiting treatment 180 °C/ *alluminio verniciato con trattamento termico 180°C*
stainless steel/ *acciaio inossidabile*

ENVIRONMENTAL SPECIFICATIONS/ CARATTERISTICHE AMBIENTALI

Operating temperature range/ *Temperatura di lavoro*

Storage temperature range/ *Temperatura di stoccaggio*

Protection degree/ *Grado di protezione* (EN 60529)

Relative humidity/ *Umidità relativa*

Vibrations/ *Vibrazioni* (EN 60068-2-6)

Shock resistance/ *Resistenza a shock* (EN 60068-2-27)

-10°C ÷ +70 °C
-30°C ÷ +80 °C
up to IP66/ *fino a IP66*
98% RH without condensing/ *senza condensazione*
10 g (from 10 up to 2.000 Hz) / *(da 10 a 2.000 Hz)*
20 g (for 11 ms) / *(per 11 ms)*

ORDER CODE

TKXXX. = . XXXXX . XXXXX . X . XX . XX,XX . XXnn . XXX-XXXX . Xnnn

a b c d e f g h i j

a MODEL/ MODELLO

TK910	unidirectional / monodirezionale
TK911	unidirectional + index/ monodirezionale + zero
TK920	bidirectional / bidirezionale
TK921	bidirectional + index/ bidirezionale + zero

b ASSEMBLY/ MONTAGGIO

= Default / Standard

c PULSE RATE/ IMPULSI GIRO

2 - 5 - 10 - 20 - 25 - 30 - 32 - 36 - 40 - 50 - 60 - 64 - 72 - 80 - 88 - 90 - 100 - 120 - 125 - 127 - 128 - 150 - 162 - 180 - 183 - 200 - 240 - 250 - 254 - 256 - 300 - 314 - 360 - 375 - 390 - 400 - 500 - 512 - 576 - 600 - 625 - 635 - 720 - 750 - 800 - 900 - 1000 - 1024 - 1200 - 1250 - 1270 - 1440 - 1500 - 1800 - 2000 - 2048 - 2500 - 2540 - 2700 - 3600 - 4096 - 5000 - 9000 - 10.000 - 20.000

others on demand/ altri a richiesta

d POWER SUPPLY/ ALIMENTAZIONE

5	+5 V ±5 %
11/30	+11÷30 V
24/5	+11/30 V supply +5 V output

e OUTPUT FREQUENCY/ FREQUENZA IN USCITA

S	from 0 a - up to 100 kHz / da 0 a 100 kHz
V	from 0 a - up to 300 kHz / da 0 a 300 kHz

f PROTECTION DEGREE/ GRADO DI PROTEZIONE

K4	IP 64 (EN60529)
K5	IP 65 (EN60529)
K6	IP 66 (EN60529)

g SHAFT/ ALBERO

6	Ø 6 mm
8	Ø 8 mm
9,52	Ø 9,52 mm
10	Ø 10 mm (Ø 11 x 28)
11	Ø 11 mm (Ø 11 x 20,5)
11R	Ø 11 mm
12	Ø 12 mm

h ELECTRICAL CONNECTIONS/ CONNESSIONI ELETTRICHE

OUTPUT S ; P ; OC ; OP ; PP2 ; LD ; LD2 (except TK921, escluso TK921)

Pnn	on axial cable gland with cable 1 ÷ 6 m long /pressacavo assiale con cavo da 1 a 6 m;
PLnn	radial cable gland with cable 1 ÷ 6 m long /pressacavo radiale con cavo da 1 a 6 m;
S07	on 7 pins axial MIL connector /conn. circolare militare assiale a 7 poli
L07	on 7 pins radial MIL connector /conn. circolare militare radiale a 7 poli

OUTPUT LD ; LD2 (only TK921, solo TK921)

Pnn	on axial cable gland with cable 1 ÷ 6 m long /pressacavo assiale con cavo da 1 a 6 m;
PLnn	radial cable gland with cable 1 ÷ 6 m long /pressacavo radiale con cavo da 1 a 6 m;
S10	on 10 pins axial MIL connector /conn. circolare militare assiale a 10 poli
L10	on 10 pins radial MIL connector /conn. circolare militare radiale a 10 poli

nn cable length/ lunghezza cavo (es. PL10 = 1 m. ...PL60 = 6 m)

i OUTPUT CIRCUITS/ CIRCUITI DI USCITA

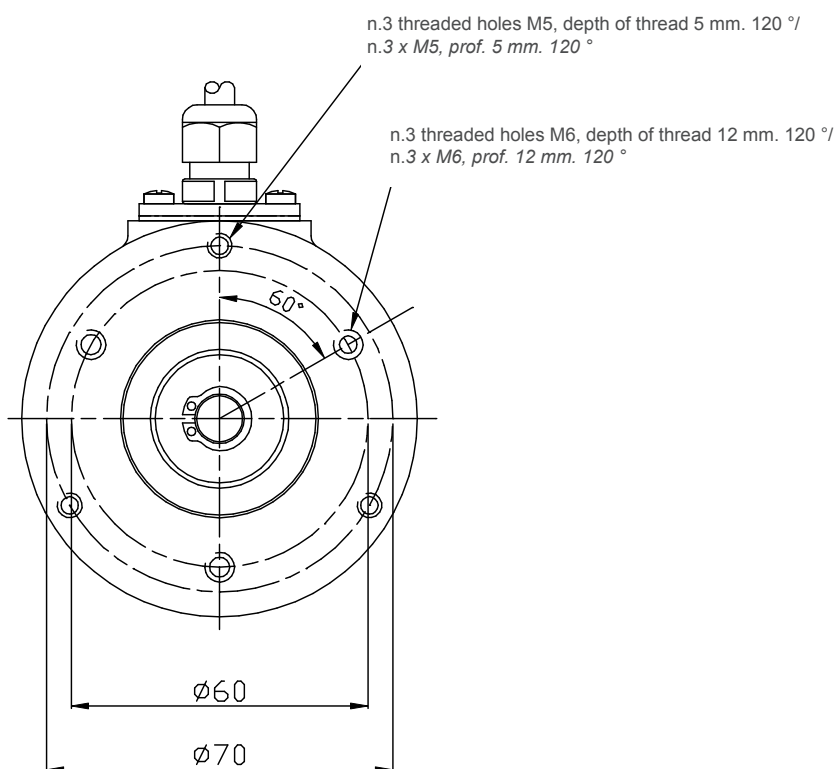
S	NPN standard (resistor included- resistenza di pull-up inclusa)
OC	NPN open collector
P	PNP (resistor included resistenza di pull-down inclusa)
OP	PNP open collector
PP2-5	Push-Pull 5 V output only - solo 5 V
PP2-1130	Push-Pull 11/30 Vcc output (only with voltage supply - solo con alimentazione 11/30 V)
LD	Line driver RS422 (26LS31) only - solo 5 V or 24/5V
LD2-5	Line driver 5 Vcc output only - solo 5 V
LD2-1130	Line driver 11/30 Vcc output (only with voltage supply - solo con alimentazione 11/30V)

j CUSTOM

CUSTOM custom execution/ esecuzione custom

Mechanical assembly/ *montaggio meccanico*

= Default / = Standard



Shaft/ Albero Ø 6,8,10	: L= 19 mm
Shaft/ Albero Ø 9.52	: L= 21 mm
Shaft/ Albero Ø 11	: L= 32 mm
Shaft/ Albero Ø 12	: L= 22,5 mm

Electrical connections/ *connessioni elettriche* - see p.4

Electrical connections/ *connessioni elettriche*

