

TSML60P-SSI

solid shaft

Ø 58



Italsensor Quality System certified according to the UNI EN ISO 9001



Features:

Optical absolute multiturn encoder **TSML60P- SSI with SSI output interface** is an ideal solution for use in harsh environmental conditions thanks to its robust design, high resolution and high protection degree.

- resolution singleturn: 2,...,8192 ppr (13 bit);
- number of turn: max. 4096 ppr (12 bit);
- total resolution: 25 bit
- protection degree IP 65;
- programmable;



MECHANICAL SPECIFICATIONS/ CARATTERISTICHE MECCANICHE

Dimensions/ *Dimensioni*

Shaft loading/ *Carico sull'albero*

Moment of inertia/ *Momento di inerzia*

Shaft Rotation Speed/ *Numero giri*

Bearings life/ *Vita dei cuscinetti*

Permissible angular acceleration/ *Accelerazione angolare massima*

Weight/ *Peso*

see drawings / vedi disegni
axial/ assiale 40 N; radial/ radiale 110 N

typically 30 gcm²

12000 RPM continuous/ continui

10 x 10⁸ turns/giri (min) - rev. min.@ 6000 RPM, 60°C, 5 N radial, 10 N axial

10⁴ rad/s²

~ 0,3 kg

ELECTRICAL SPECIFICATIONS/ CARATTERISTICHE ELETTRICHE

Power supply/ *Alimentazione*

STD codes/ *Codici STD*

SSI

Protection/ *Protezione*

Power dissipation (no load)/ *Potenza assorbita*

4,5÷30 V

programmable GRAY - BINARY/ programmabile GRAY - BINARIO

clock frequency 100 kHz ÷ 2 MHz, monoflop time 16 µs ÷ 25 µs, typical 20 µs/

frequenza clock 100 kHz ÷ 2 MHz, tempo di monoflop 25 µs

against inversion of polarity/ contro inversione di polarità

<1 W

MATERIALS/ MATERIALI UTILIZZATI

Flange/ *Flangia*

Housing/ *Corpo*

Shaft/ *Albero*

aluminum non corroding/ in alluminio anticorrosivo

oxidated aluminum / alluminio ossidato

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)

Warm up time/ *Tempo di inizializzazione*

-40 °C ÷ +85 °C

-40 °C ÷ +85 °C

IP65 (Albero/Shaft) IP66 (Involucro/Housing)

98% RH without condensing/ senza condensazione

≤ 10 g (10-1000 Hz, EN 60068-2-6)

≤ 100 g (half-sine 6ms, EN 60068-2-27)

1 s

ORDER CODE

TSML60P . XX . 8192 . 4096 . G . XX/XX . K5 . XX . XXnn . XXXX . XXX . X

a

b

c

d

e

f

g

h

i

j

k

l

a MODEL/ MODELLO

TSML60P

b ASSEMBLY/ MONTAGGIO

S Servo flange/ flangia servo
 SG Servo-clip flange/ flangia servo-graffe
 F Square flange/ flangia quadra

c STEPS/ PASSI PER GIRO

8192 from 2 up to 8192 steps/turn programmable (13 bit)
 da 2 a 8192 passi/ giro programmabile

d TURNS/ NUMERO GIRI

4096 from 1 to 4096 revolutions programmable (12 bit)
 da 1 a 4096 giri programmabili

e CODE/ CODE

G Natural Gray code/ codice Gray naturale
 Programmable/ programmabile Gray-Binary

f POWER SUPPLY/ ALIMENTAZIONE

4,5/30 +4,5÷30 V
 11/27 +11÷27 V

g PROTECTION DEGREE/ GRADO DI PROTEZIONE

K5 IP65 (EN 60529: 1991)

h SHAFT/ ALBERO

6 Ø6 mm (SG)
 10 Ø10 mm (S, F)

i ELECTRICAL CONNECTIONS/ CONNESSIONI ELETTRICHE

SL12 on 12 pin radial connector/ connettore circolare radiale a 12 poli.

"T" type connection / connessione tipo "T"

Mating female connector cod. 1E2A212H / Femmina volante cod. 1E2A212H



Pin 1: 0V
 Pin 2: DATA+
 Pin 3: CKI+
 Pin 4: N.C.
 Pin 5: N.C.
 Pin 6: N.C.
 Pin 7: N.C.
 Pin 8: +Vcc
 Pin 9: Zero Set
 Pin 10: DATA-
 Pin 11: CKI-
 Pin 12: UP/DOWN

j OUTPUT CIRCUITS/ CIRCUITI DI USCITA

S25C SSI 25 bit center alignment (tree format)/ SSI 25 bit allineato al centro
 Programmable format (standard/ tree format)/ formato programmabile (standard/ albero)

k SERIAL INTERFACE/ INTERFACCIA DI PROGRAMMAZIONE

485 Program interface RS485 / Interfaccia programmazione RS485

In order to program the device you must require the dedicated adapter model TSM60P-PT/
 Per la programmazione richiedere l'apposito adattatore codice TSM60P-PT

l OPTIONS/ OPZIONI

W Up/Down PNP (UP open or GND, DOWN 4,5 to Vcc)
 T Zero Set PNP (>= 4,5 V up to Vcc)

The technical drawing shows two views of the M30-600 motor:

- Side View (Left):** Shows the motor's profile with dimensions: total height Ø58, mounting flange diameter Ø36f7, shaft diameter Ø10h8, and a 1mm keyway depth. The base has a width of 20mm and a total length of 53 max mm.
- Front View (Right):** Shows the circular face with a diameter of Ø48. It features three mounting holes labeled "n°3 M3 a 120°" and four ventilation slots labeled "n°3 M4 a 120°". A 15° angle is indicated at the bottom.

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