

**TI70**

**solid shaft**

**Ø 80/85**



Italsensor Quality System certified according to the UNI EN ISO 9001



## Features:

TI70 - rugged optical incremental encoder for heavy duty application. The body and enclosures are passivated by means of anodic oxidation.

The model TI70 is developed and manufactured according to ATEX rules - ATEX EEx d IIB T6 (CEI EN 60079-0/60079-1 U11203 C22.2), but it is supplied without ATEX certification.

- **robust design for applications in harsh environments;**
- **high reliability and long service life;**
- **different types of flanges;**
- **resolution up to 9.000 ppr; others on demand;**
- **protection degree IP64;**
- **cable output;**



## 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 inertial/ Momento di inerzia**

**Bearing life/ Vita dei cuscinetti**

**Weight/ Peso**

see drawings/ vedi disegni  
axial/ assiale 25 N; radial/ radiale 25 N  
10.000 RPM (short cycle time/ brevi periodi) 6.000 RPM (continuous/ continui)  
0,025 Nm; 0,040 Nm with proof shaft /con asse stagno  
40 g cm<sup>2</sup>  
5 x 10<sup>9</sup> rev. min./ giri (minimo)  
~ 0,9 kg axial/ assiale/ 1,1 kg radial (without flange)/ radiale (senza flangia)

## 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**

9.000 ppr; others on demand/ 9.000 ppr; altri a richiesta  
5 V; 11÷30 V; 5/28V  
up to 300 kHz/ fino a 300 kHz  
on A-B- A+B according to types/ su canale A - B- A+B secondo i modelli  
150 mA max  
short circuit protection, no limit duration (only output LD2 and PP2);  
against inversion of polarity (except 5V and 5/30V) /  
contro il cortocircuito (solo elettronica LD2 e PP2);  
contro inversione di polarità (escluso 5V e 5/30 V) - disponibile su richiesta;

## MATERIALS/ MATERIALI UTILIZZATI

**Flange/ Flangia**

**Housing/ Corpo**

**Shaft/ Albero**

aluminum non corroding/ in alluminio anticorrosivo  
Aluminum anticorrosive/ alluminio non corroding  
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)**

-20°C ÷ +70 °C  
-30°C ÷ +85 °C  
IP64  
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

**TIXXXX . XXX . XXXX . XXXXX . X . K4 . XX . XXnn . XXX-XXXX . Xnnn**

**a                    b                    c                    d                    e                    f                    g                    h                    i                    j**

#### **a** MODEL/ MODELLO

TI700	unidirectional / monodirezionale
TI701A	unidirectional + index on A/ monodirezionale + zero su A
TI702	bidirectional / bidirezionale
TI703A	bidirectional + index on A/ bidirezionale + zero su A
TI703B	bidirectional + index on B/ bidirezionale + zero su B
TI703AB	bidirectional + index on A+B/ bidirezionale + zero su A+B

#### **b** ASSEMBLY/ MONTAGGIO

F	Square flange / flangia quadra
S	Servo flange/ servo
FRE	Flange REO - REO 444

#### **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

others on demand/ altri a richiesta

#### **d** POWER SUPPLY/ ALIMENTAZIONE

5	+5 V ±5 %
11/30	+11±30 V
5/28	+5 V +28V

#### **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)
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#### **g** SHAFT/ ALBERO

10	Ø 10 mm x 19,5 (Flange F - S)
11	Ø 11 mm x 29,5 (Flange FRE)

#### **h** ELECTRICAL CONNECTIONS/ CONNESSIONI ELETTRICHE

OUTPUT S ; P ; OC ; OP ; PP2 ; LD ; LD2

RA <sub>nn</sub>	on axial tap nipple 1/2" GAS with cable 1 ÷ 6 m long / raccordo 1/2" GAS maschio assiale con cavo da 1 a 6 m;
RL <sub>nn</sub>	on radial tap nipple 1/2" GAS with cable 1 ÷ 6 m long/ raccordo 1/2" GAS maschio radiale con cavo da 1 a 6 m;
GA <sub>nn</sub>	on axial female nipple with cable 1 ÷ 6 m long/ raccordo 1/2" GAS femmina assiale con cavo da 1 a 6 m;
GL <sub>nn</sub>	on radial female nipple with cable 1 ÷ 6 m long/ raccordo 1/2" GAS femmina radiale con cavo da 1 a 6 m.
nn	cable length/ lunghezza cavo (es. PL10 = 1 m. ...PL60 = 6 m)

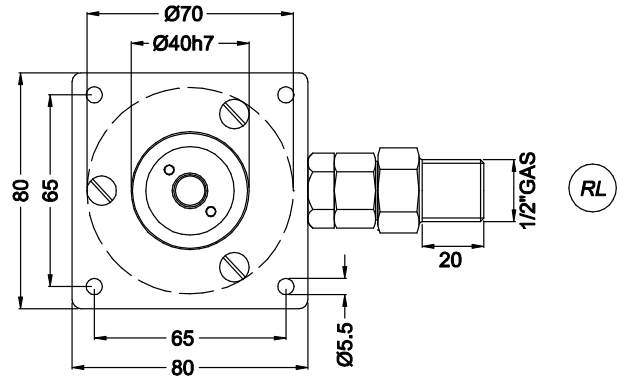
#### **i** OUTPUT CIRCUITS/ CIRCUITI DI USCITA

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)
PP2-1528	Push-Pull 5/28 Vcc output ( only with voltage supply - solo con alimentazione 5/28V)
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)
LD2-1528	Line driver 5/28 Vcc output ( only with voltage supply - solo con alimentazione 5/28V)

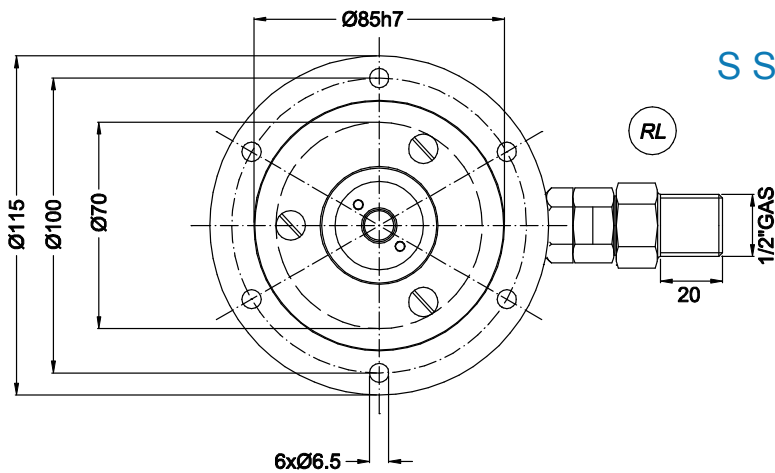
#### **j** CUSTOM

CUSTOM	custom execution/ esecuzione custom
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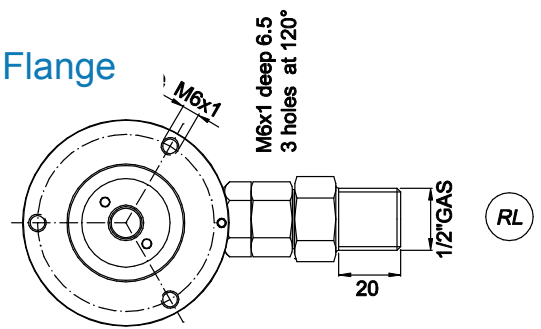
F Flange



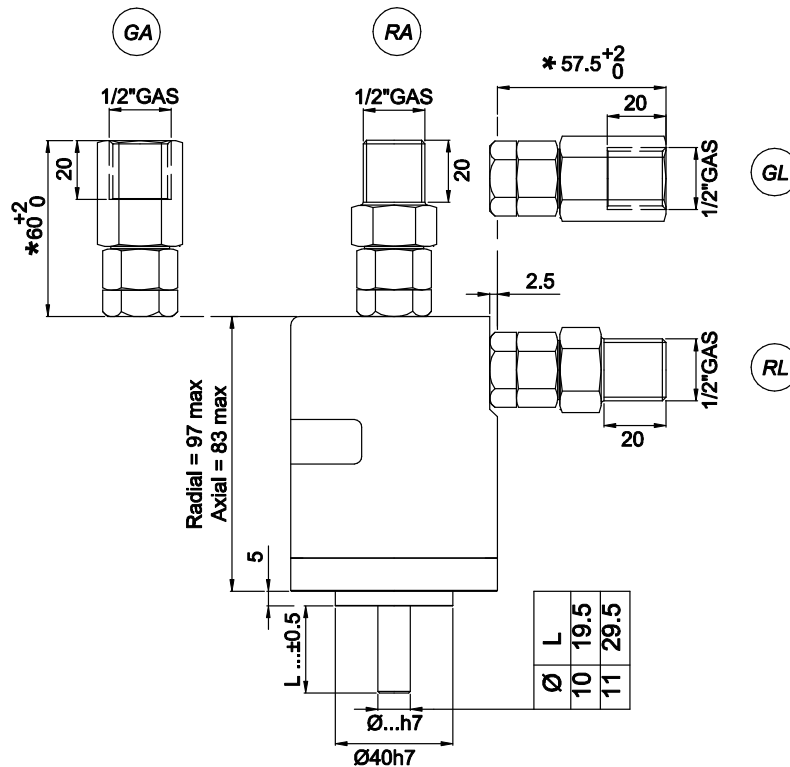
FRE Flange REO444



S Servo Flange



Electrical connections/  
connessioni elettriche



\* only for information