

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 | see drawings/ vedi disegni |
| Shaft loading/ Carico sull'albero | axial/ assiale 25 N; radial/ radiale 25 N |
| Shaft Rotation Speed/ Numero giri | 10.000 RPM (short cycle time/ brevi periodi) 6.000 RPM (continuous/ continui) |
| Starting torque at 25°C/ Coppia di partenza a 25 °C | 0,025 Nm; 0,040 Nm with proof shaft /con asse stagno |
| Moment of inertial/ Momento di inerzia | 40 g cm ² |
| Bearing life/ Vita dei cuscinetti | 5 x 10 ⁹ rev. min./ giri (minimo) |
| Weight/ Peso | ~ 0,9 kg axial/ assiale/ 1,1 kg radial (without flange)/ radiale (senza flangia) |

ELECTRICAL SPECIFICATIONS/ CARATTERISTICHE ELETTRICHE

| | |
|--|---|
| Resolution/ Risoluzione | 9.000 ppr; others on demand/ 9.000 ppr; altri a richiesta |
| Power supply/ Alimentazione | 5 V; 11÷30 V; 5/28V |
| Output frequency/ Frequenza in uscita | up to 300 kHz/ fino a 300 kHz |
| Synchronous index output/ Sincronismo di zero | on A-B- A+B according to types/ su canale A - B- A+B secondo i modelli |
| Supply current without load/ Assorbimento in corrente | 150 mA max |
| Protection/ Protezione | 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 | aluminum non corroding/ in alluminio anticorodal |
| Housing/ Corpo | Aluminum anticorodal/ alluminio non corroding stainless steel/ acciaio inossidabile |
| Shaft/ Albero | |

ENVIRONMENTAL SPECIFICATIONS/ CARATTERISTICHE AMBIENTALI

| | |
|---|--|
| Operating temperature range/ Temperatura di lavoro | -20°C ÷ +70 °C |
| Storage temperature range/ Temperatura di stoccaggio | -30°C ÷ +85 °C |
| Protection degree/ Grado di protezione (EN 60529) | IP64 |
| Relative humidity/ Umidità relativa | 98% RH without condensing/ senza condensazione |
| Vibrations/ Vibrazioni (EN 60068-2-6) | 10 g (from 10 up to 2.000 Hz) / (da 10 a 2.000 Hz) |
| Shock resistance/ Resistenza a shock (EN 60068-2-27) | 20 g (for 11 ms) / (per 11 ms) |

ORDER CODE

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

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b
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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)

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 _{nn} | 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 _{nn} | 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 _{nn} | on axial female nipple with cable 1 ÷ 6 m long/ raccordo 1/2" GAS femmina assiale con cavo da 1 a 6 m; |
| GL _{nn} | 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) |

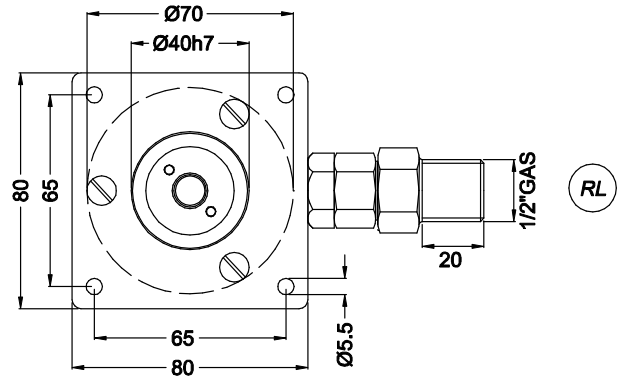
i OUTPUT CIRCUITS/ CIRCUITI DI USCITA

| | |
|----------|--|
| 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) |

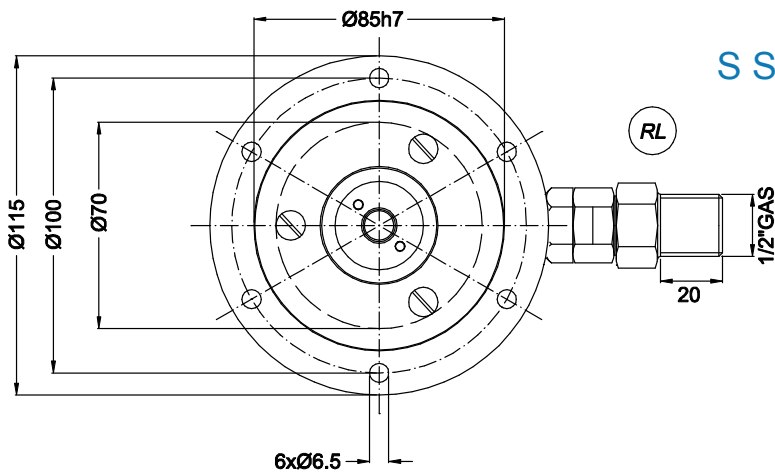
j CUSTOM

CUSTOM custom execution/ esecuzione custom

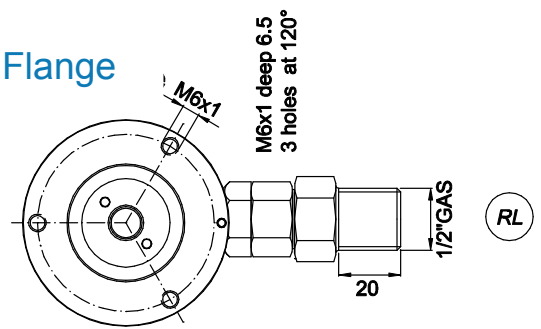
F Flange



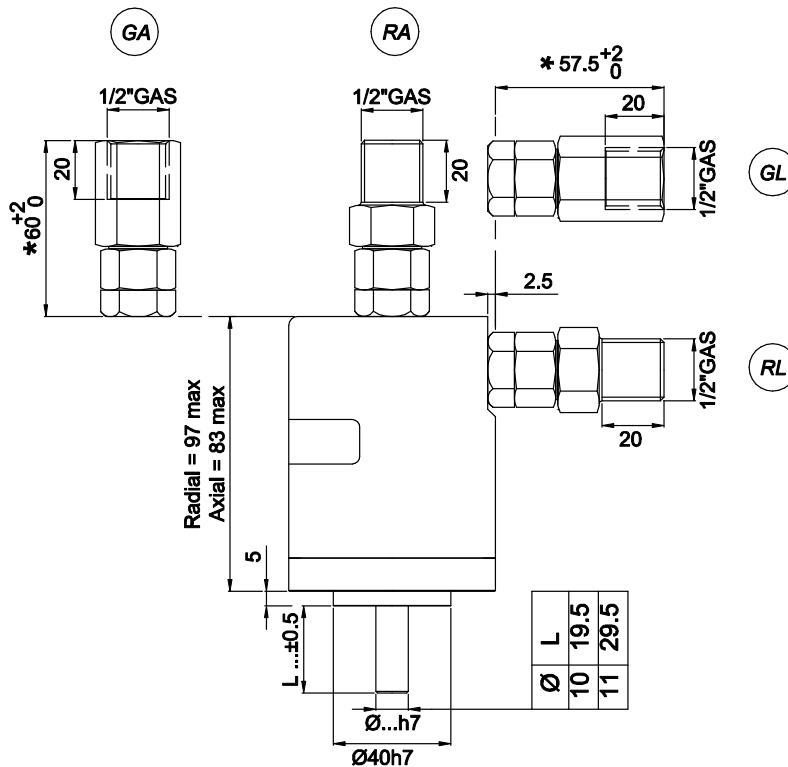
FRE Flange REO444



S Servo Flange



Electrical connections/ connessioni elettriche



* only for information