

TS44

solid shaft

Ø 44



Italsensor Quality System certified according to the UNI EN ISO 9001



## Features:

TS44 - economic incremental optical encoder suitable for different industrial applications.

- different types of flanges;
- resolution up to 2.000 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 inertial/ *Momento di inerzia*

Bearing life/ *Vita dei cuscinetti*

Weight/ *Peso*

see drawings/ *vedi disegni*  
 axial/ *assiale* 40 N; radial/ *radiale* 40 N  
 10.000 RPM (short cycle time/ *brevi periodi*) 6.000 RPM (continuous/ *continui*)  
 2.000 turn/min with protection shaft/ *giri/min con asse stagno*  
 0,005 Nm; 0,006 Nm with proof shaft /*con asse stagno\**(1)  
 6 g cm<sup>2</sup>  
 5 x 10<sup>9</sup> rev. min./ *giri (minimo)*  
 ~ 0,23 kg

## 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*

2.000 ppr; others on demand/ 2.000 ppr; altri a richiesta  
 5 V; 5/24 V; 24/5 V;  
 50 kHz  
 on A default, B- A+B optional/ *su canale A predefinito - B- A+B a richiesta*  
 100 mA max  
 short circuit protection, no limit duration (only output LD2 and PP2);  
 against inversion of polarity (except 5V)/  
 contro il cortocircuito (solo elettronica LD2 e PP2);  
 contro inversione di polarità (escluso 5V )

## MATERIALS/ MATERIALI UTILIZZATI

Flange/ *Flangia*

Housing/ *Corpo*

Shaft/ *Albero*

aluminum S11/ *in alluminio S11*  
 Polyamid 6 (PA6)/ *Poliammide 6 (PA6)*  
 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

**TSXXX . XX . XXXX . XXXX . S . XX . 6 . XXnn . XXX-XXXX . Xnnn**

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

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

Only bidirectional + index/ bidirezionale + zero

TS441 bidirectional + index on A/ bidirezionale + zero su A  
 TS442 bidirectional+ index on B/ bidirezionale + zero su B  
 TS443 bidirectional+ index on A&B/ bidirezionale + zero su A e B

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

P Standard flange Ø 44 mm/ flangia standard Ø 44 mm;  
 PX Proxy flange Ø 44 mm/ flangia proxy Ø 44 mm;  
 SE Servo flange Ø 44 mm (3 holes M4x5 Ø 38mm)/  
 Flangia servo Ø 44 mm (3 fori M4x5 Ø 38mm);  
 SI Servo flange Ø 44 mm (3 holes M3x5 Ø 30mm)/  
 Flangia servo Ø 44 mm (3 fori M3x5 Ø 30mm);  
 SG Servo-clip / servo-graffe.

#### **c** PULSE RATE/ IMPULSI GIRO

2 - 10 - 15 - 20 - 25 - 50 - 100 - 200 - 300 - 360 - 400 - 500 - 1000 -  
 1024 - 1250 - 2000

others on demand/ altri a richiesta

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

5 +5 V ±5 %  
 5/24 +5V + 24 V  
 24/5 +24 V supply +5 V output

#### **e** OUTPUT FREQUENCY/ FREQUENZA IN USCITA

S from 0 a - up to 50 kHz / da 0 a 50 kHz

#### **f** PROTECTION DEGREE/ GRADO DI PROTEZIONE

K1 IP 55 (EN60529) only for output "PS", "DB9", "S05", "S08"  
 K4 IP 64 (EN60529)  
 K5 IP 65 (EN60529) only with "P" assembly/ solo con montaggio "P"  
 K6 IP 66 (EN60529) only with "P" assembly/ solo con montaggio "P"

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

6 Ø 6 mm

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

OUTPUT S ; P ; OC ; OP ; PP2

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;  
 PSnn on radial cable gland with cable 1 ÷ 6 m long /gommino passacavo radiale con cavo da 1 a 6 m;

S05 on 5 pins axial MIL connector /conn. circolare militare assiale a 5 poli  
 D09 on 9 pins axial DB9 connector /conn. submin assiale a 9 poli

OUTPUT LD ; LD2

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;  
 PSnn on radial cable gland with cable 1 ÷ 6 m long /gommino passacavo radiale con cavo da 1 a 6 m;

S08 on 8 pins axial MIL connector /conn. circolare militare assiale a 8 poli  
 D09 on 9 pins axial DB9 connector /conn. submin assiale a 9 poli

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

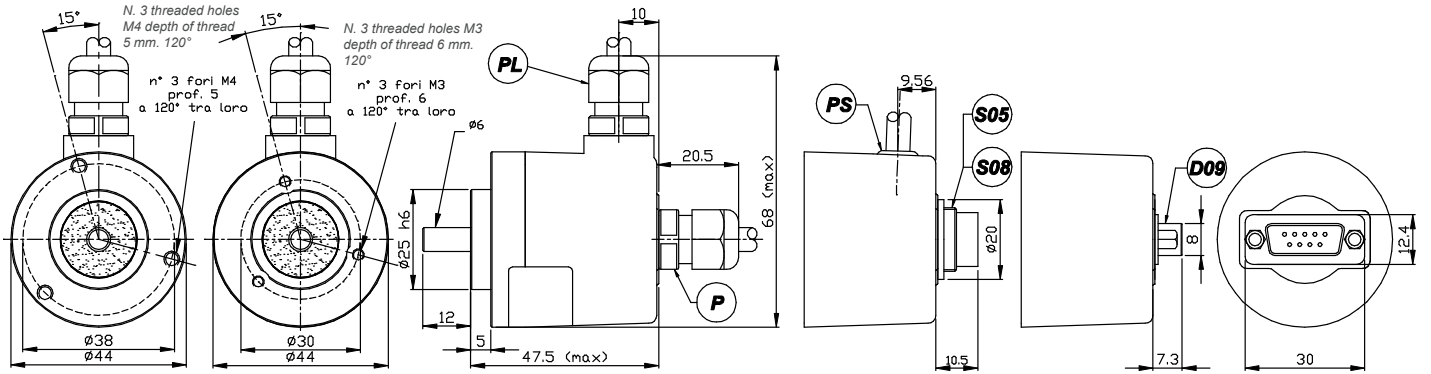
#### **i** OUTPUT CIRCUITS/ CIRCUITI DI USCITA

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  
 PP2-524 Push-Pull 5/24 V output ( only with voltage supply - solo con alimentazione 5/24 V )  
 LD Line driver RS422 (26LS31) only - solo 5 V or 24/5V  
 LD2-5 Line driver 5 Vcc output  
 LD2-524 Line driver 5/24 Vcc output ( only with voltage supply - solo con alimentazione 5/24V )

#### **j** CUSTOM

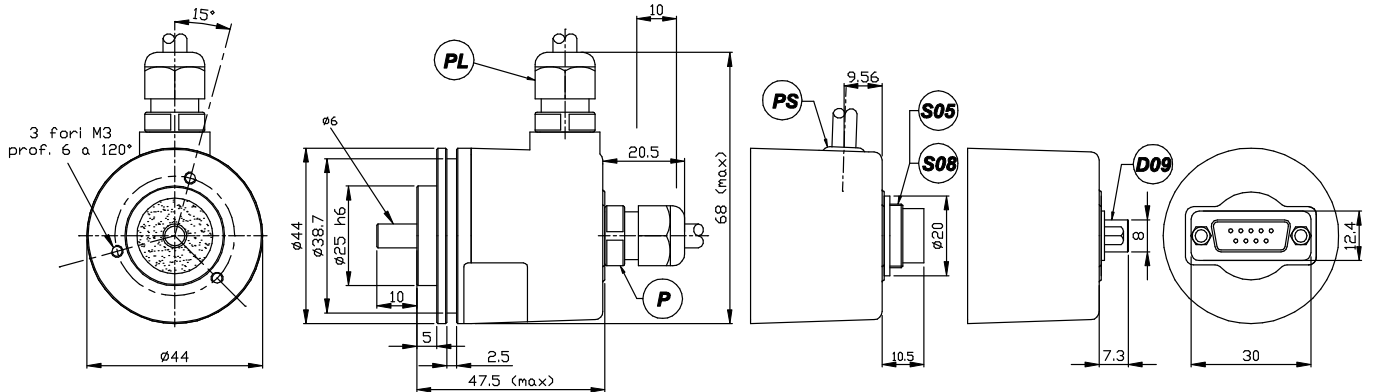
CUSTOM custom execution/ esecuzione custom

### SE Flange SI Flange

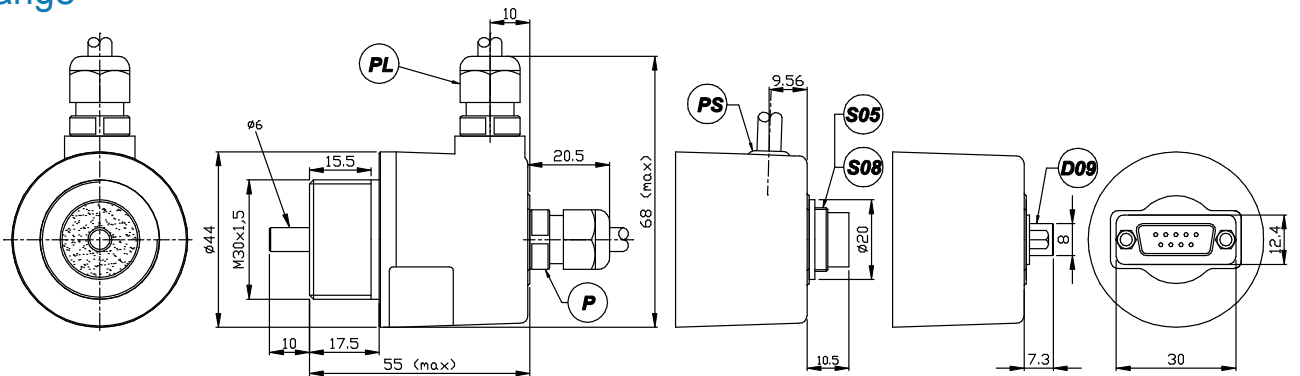


### SG Flange

3 Clips (BSF 38) on Ø 56 ± 0,2 mm to screw with machine screw M2x10. Bloccare con vite M2x10.



### PX Flange



### P Flange

3 Clips (BSF 38) on Ø 56 ± 0,2 mm to screw with machine screw M2x10. Bloccare con vite M2x10.

