

**TSW58**

**hollow shaft**

**Ø 58**



Italsensor Quality System certified according to the UNI EN ISO 9001



## Features:

TSW58 - an economic incremental optical encoder suitable for different industrial applications. Thanks to its versatility and reliability, this model allows to reduce costs of production and maximize functionality; guarantees completely controlled manufacturing process significantly reducing downtime – a very important factor for continuous production process.

- **economic and reliable encoder for various applications;**
- **resolution up to 10.000 ppr, others on demand;**
- **wide range of shaft diameter;**
- **protection degree IP64;**
- **cable and connector outputs.**



## MECHANICAL SPECIFICATIONS/ CARATTERISTICHE MECCANICHE

**Dimensions/ Dimensioni**

**Shaft/ Albero**

**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  
 stainless steel/ acciaio inossidabile  
 axial/ assiale 40 N; radial/ radiale 60 N  
 6.000 RPM (continuous/ continui)  
 0,025 Nm; \*(1)  
 40 g cm<sup>2</sup>  
 5 x 10<sup>9</sup> rev. min/ giri (minimo)  
 ~ 0,25 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**

10.000 ppr; others on demand/ 10.000 ppr; altri a richiesta  
 5 V; 5÷28 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, 5/28 V) - available on demand/  
 contro il cortocircuito (solo elettronica LD2 e PP2);  
 contro inversione di polarità (escluso 5V, 5/28V) - disponibile su richiesta;

## MATERIALS/ MATERIALI UTILIZZATI

**Flange/ Flangia**

**Housing/ Corpo**

**Shaft/ Albero**

aluminum 11S/ in alluminio 11S  
 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 ÷ +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)

\*(1) Not a test parameter, information only/ Valore indicativo

### ORDER CODE

**TSWXXX . XXX . XXXXX . XXXXX . X . XX . XXXX . XXnn . XXX-XXXX . Xnnn**  
**a            b            c            d            e            f            g            h            i            j**

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

**TSW580**    bidirectional / bidirezionale  
**TSW581**    bidirectional + index/ bidirezionale + zero

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

**M0**            Without spring/ senza molla  
**M1**            With spring type M1/ Con molla M1  
**M2**            With spring type M2/ Con molla M2

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

4 - 25 - 50 - 60 - 100 - 140 - 150 - 200 - 250 - 300 - 360 - 400 - 500 - 600 -  
 625 - 635 - 720 - 1000 - 1024 - 1200 - 1250 - 1440 - 1500 - 1600 - 1800 -  
 2000 - 2048 - 2500 - 3600 - 4096 - 5000 - 9000 - 10.000

other values on demand/ altri valori a richiesta

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

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

#### **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

**B060**            Ø 6 mm  
**B080**            Ø 8 mm  
**B952**            Ø 9,52 mm  
**B100**            Ø 10 mm  
**B110**            Ø 11 mm  
**B120**            Ø 12 mm  
**B127**            Ø 12,7 mm  
**B140**            Ø 14 mm  
**15**                Ø 15 mm

Clamp with collar/ Chiusura tramite collare  
 Reduction bushing for shaft diameter less than 15 mm/  
 Boccole di riduzione per diametro inferiore a 15 mm

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

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

**PLnn**          radial cable gland with cable 1 ÷ 6 m long /pressacavo radiale con cavo da 1 a 6 m;  
**L07**            on 7 pins radial MIL connector /conn. circolare militare radiale a 7 poli (TYPE "A", "B")  
**L10**            on 10 pins radial MIL connector /conn. circolare militare radiale a 10 poli (TYPE "C")  
**R1**              on 12 pins radial "contact" connector /conn. circolare radiale antiorario a 12 poli (TYPE "D" CCW)

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

**Note:**            L10: only for TSW581 with LD, LD2 electronic output/ L10: solo versione TSW581 con elettronica LD, LD2

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

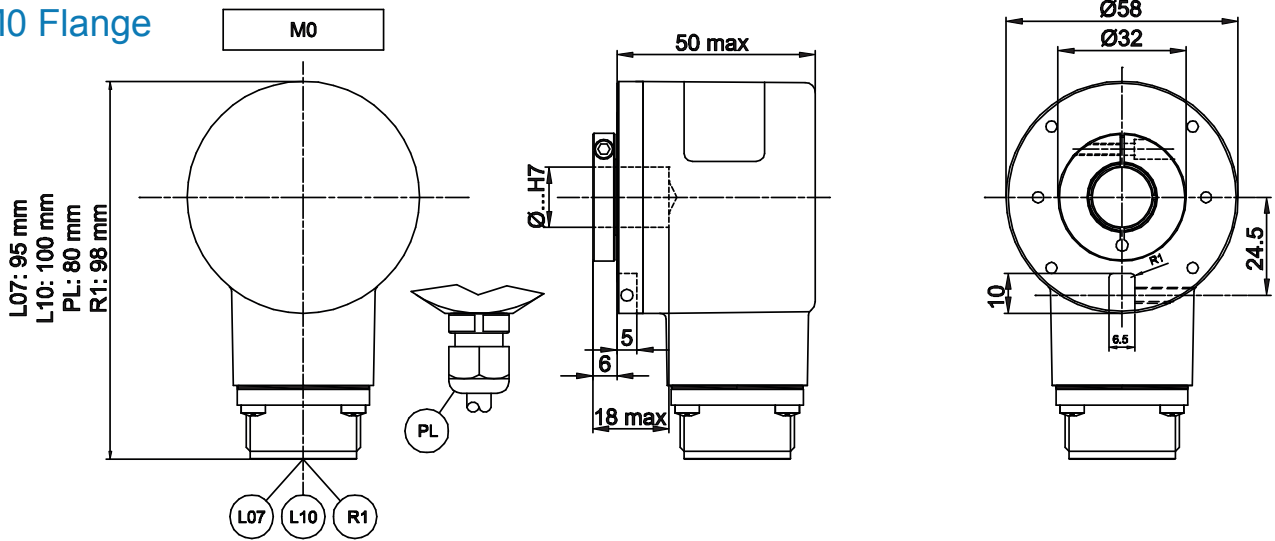
**S**                NPN standard ( resistor included- resistenza di pull-up inclusa)  
**OC**            NPN open collector  
**P**                PNP ( resistor included resistenza di pull-down inclusa)  
**OP**            PNP open collector  
**PP2-5**          Push-Pull 5 V output only - solo 5 V  
**PP2-1130**      Push-Pull 11/30 Vcc output ( only with voltage supply - solo con alimentazione 11/30 V)  
**PP2-528**       Push-Pull 5/28 Vcc output (only with voltage supply - solo con alimentazione 5/28 V)  
**LD**            Line driver RS422 (26LS31) only - solo 5 V  
**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)  
**LD2-528**       Line driver 5/28 Vcc output (only with voltage supply - solo con alimentazione 5/28 V)

#### **j** CUSTOM

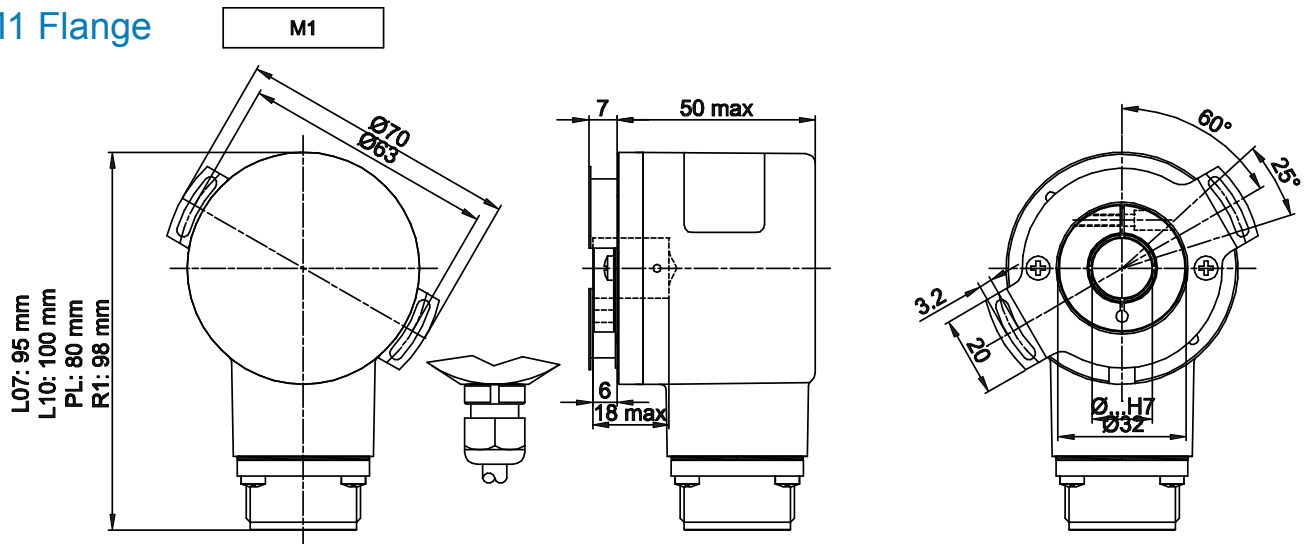
**CUSTOM**      custom execution/ esecuzione custom

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**M0 Flange**



**M1 Flange**



**M2 Flange**

