

### Features:

Optical absolute multiturn encoder **TSM60P- PRDP-PRDNET with PROFIBUS and DEVICENET output interfaces** 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 GRAY - BINARY;
- output interfaces: PROFIBUS; DEVICENET



### MECHANICAL SPECIFICATIONS/ CARATTERISTICHE MECCANICHE

Dimensions/ <i>Dimensioni</i>	see drawings / vedi disegni
Shaft loading/ <i>Carico sull'albero</i>	axial/ assiale 40 N; radial/ radiale 60 N
Moment of inertia/ <i>Momento di inerzia</i>	typically $2,5 \cdot 10^{-6}$ kg m <sup>2</sup>
Shaft Rotation Speed/ <i>Numero giri</i>	6.000 RPM continuous/ continui
Bearings life/ <i>Vita dei cuscinetti</i>	$\geq 3.9 \times 10^{10}$ turns/giri (min) - rev. min. @ $\leq 3000$ RPM, $\leq 60$ °C, $\leq 20$ N axial, $\leq 30$ N radial
Permissible angular acceleration/ <i>Accelerazione angolare massima</i>	$10^4$ rad/s <sup>2</sup>
Startup torque/ <i>Coppia di partenza</i>	2 Ncm
Weight/ <i>Peso</i>	~ 0,7 kg

### ELECTRICAL SPECIFICATIONS/ CARATTERISTICHE ELETTRICHE

Power supply/ <i>Alimentazione</i>	11÷27 V
STD codes/ <i>Codici STD</i>	programmable GRAY - BINARY/ programmabile GRAY - BINARIO
Option/ <i>Opzioni</i>	programmable count direction and position preset/ up/down e preset posizione programmabili
Protection/ <i>Protezione</i>	against inversion of polarity/ contro inversione di polarità
Power dissipation (without load)/ <i>Potenza (funzionamento a vuoto)</i>	< 4W

### MATERIALS/ MATERIALI UTILIZZATI

Flange/ <i>Flangia</i>	aluminum non corroding/ in alluminio anticorrosivo
Housing/ <i>Corpo</i>	black painted aluminum / alluminio verniciato nero
Shaft/ <i>Albero</i>	stainless steel/ acciaio inossidabile

### ENVIRONMENTAL SPECIFICATIONS/ CARATTERISTICHE AMBIENTALI

Operating temperature range/ <i>Temperatura di lavoro</i>	-20 °C ÷ +70 °C
Storage temperature range/ <i>Temperatura di stoccaggio</i>	-30 °C ÷ +80 °C
Protection degree/ <i>Grado di protezione (EN 60529)</i>	IP65
Relative humidity/ <i>Umidità relativa</i>	98% RH without condensing/ senza condensazione
Vibrations/ <i>Vibrazioni (EN 60068-2-6: 1996)</i>	$\leq 100$ m/s <sup>2</sup> , sine 50-2000 Hz
Shock resistance/ <i>Resistenza a shock (EN 60068-2-27:1995)</i>	$\leq 1000$ m/s <sup>2</sup> , half-sine 11ms

### ORDER CODE

**TSM60P . XX . 8192 . 4096 . G . 11/27 . K5 . XX . PL= . XXXXX**

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

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

TSM60P

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

S Servo flange/ Flangia servo  
 SG Serv-Graffe/ Servo-clip  
 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

11/27 +11÷27 V

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

K5 IP65 (EN 60529: 1991)

#### **h** SHAFT/ ALBERO

6 Ø6mm (SG)  
 10 Ø10 mm (S, F)

#### **i** ELECTRICAL CONNECTIONS/ CONNESSIONI ELETTRICHE

PL= radial output with a cable gland (3 x PG9)/ uscita su pressacavo radiale (3 x PG9)

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

PRDP Profibus (PNO profile class 2)  
 PDNET DeviceNET (CAN-Bus-Interface ISO/DIS 11898)

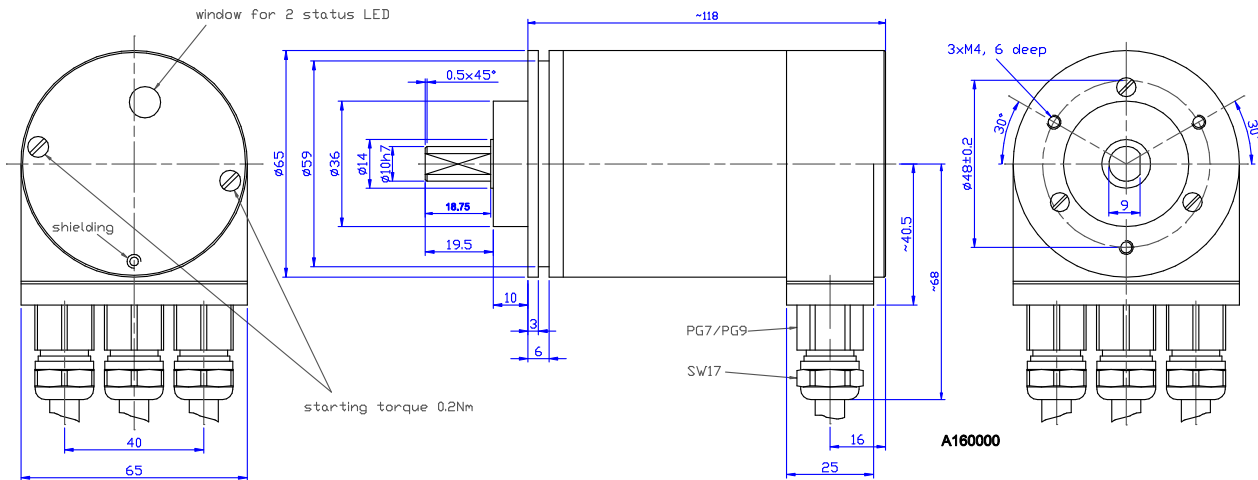
#### PROFIBUS

Addressing / indirizzamento: 0 ÷99 (adjustable by dip-switches/ tramite dip-switches )  
 Baud Rate 9.6 kbit/s ÷ 12 Mbit/s

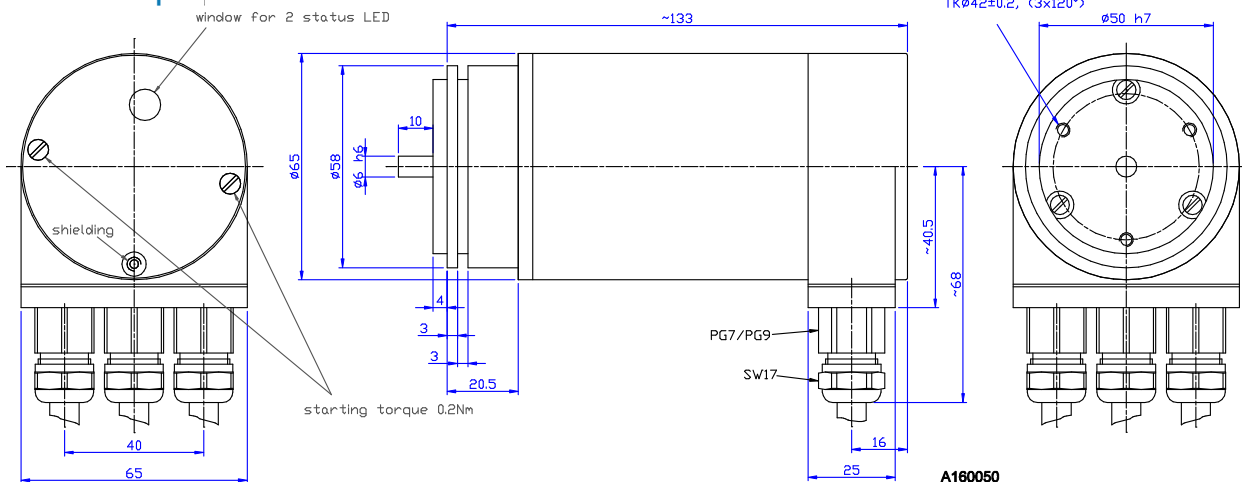
#### DeviceNET

Addressing / indirizzamento: 0 to 63 (adjustable by dip-switches/ tramite dip-switches )  
 Baud Rate (adjustable by dip-switches / impostabile tramite dip-switches)  
 125 kbaud, line length up to 500 m  
 250 kbaud, line length up to 250 m  
 500 kbaud, line length up to 100 m

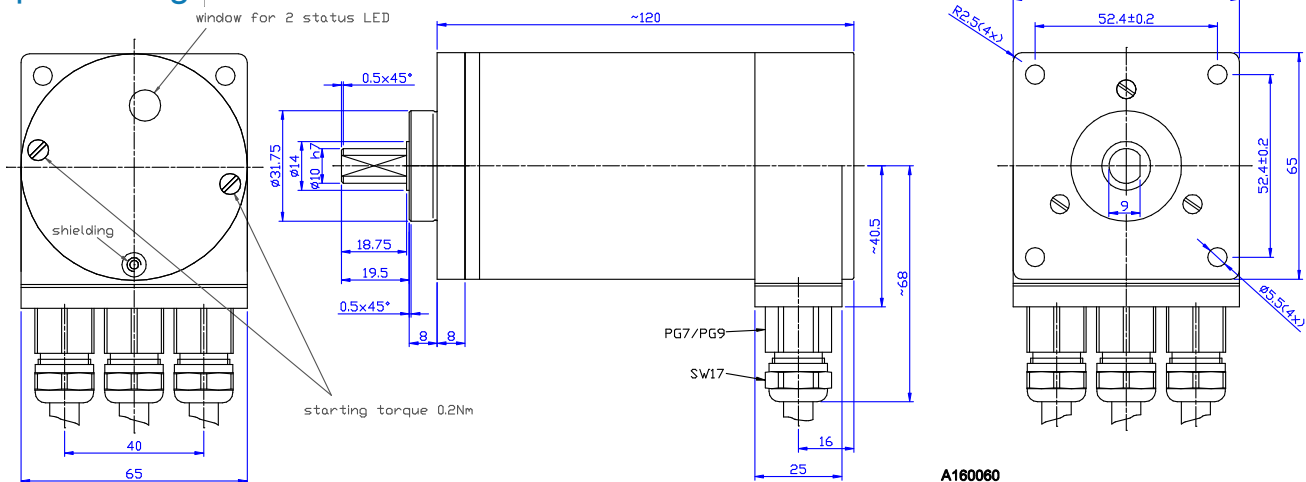
### S - Servo flange



### SG - Servo-clip



### F - Square flange



For shielding  
use metric screw M4x8 with forked terminal.  
For good contact to housing use a  
studded disc DIN6797-A 4.3-Fst.

Technical specifications subject to changes.