

# Shirashian Co.

## Rotary Position Sensor

SG-512 Series (Pride Sagem type)

SG-512 Series

Typical Application: Throttle & Pedal Position

Features / Benefits:

- Sealed, Spring Return Rotor
- Non-Adjustable Mounting
- Clockwise Rotation
- Mates with 3 Way "Mini-Timer" Style Connector



### TYPICAL SPECIFICATIONS

#### ELECTRICAL

Total Resistance(Terminal 1-3):	4.0 K $\Omega$ $\pm$ 20%
Wiper protection resistance (Wiper in zero-position,terminals 1-2):	1.5 K $\Omega$ $\pm$ 10%
Linearity:	< $\pm$ 1% (independent)
Usable Electrical Angle Area:	106.4 $^{\circ}$
Angle Between Internal Stops:	110 $^{\circ}$
Output Slope:	0.00927 (% / deg) = 46.35 mV / deg
Idle Voltage:	565 $\pm$ 135 mV
W.O.T Voltage:	4250 $\pm$ 450 mV
Hysteresis:	< 1% Applied Voltage
Electrical Limit:	16 VDC Maximum
Operation voltage:	5 V
Maximum Power Rating:	0.08 Watts

#### MECHANICAL

Right Stop Position:	0 $^{\circ}$
Left Stop Position:	110 $^{\circ}$
Torque:	Start of Rotation, >0.015 Nm End of Rotation, <0.12 Nm
Stop Strength:	0.8 N
Air Passage Leak	No leak in air pressure= 2 bar

#### DURABILITY

Mechanical Cycling:	1.0 $\times$ 10 <sup>6</sup> Full Strokes 0.5 $\times$ 10 <sup>6</sup> Half Cycles 5.0 $\times$ 10 <sup>6</sup> Dither Strokes
Standard Vibration:	24 hrs; 3 Planes 10 to 250 Hz; 1.36 – 32 g, 0 $^{\circ}$ to 80 $^{\circ}$ C
Thermal Shock:	100 Cycles, -40 $^{\circ}$ to 135 $^{\circ}$ C
Temperature Range (Operation & Storage):	-40 $^{\circ}$ to 135 $^{\circ}$ C



HEADQUARTER  
Shirashian sanat co.  
No.419, 10<sup>th</sup> St., 1<sup>st</sup> Blvd.,  
Buali industrial estate  
6518114334 Hamedan,  
Iran  
Tel/Fax: 0098 8134383212-13  
Website:www.shirashianco.com  
Email:info@shirashianco.com  
Date: 04/23/2002  
Revised: 12/20/2012  
Version: 1.3

## ENVIRONMENTAL

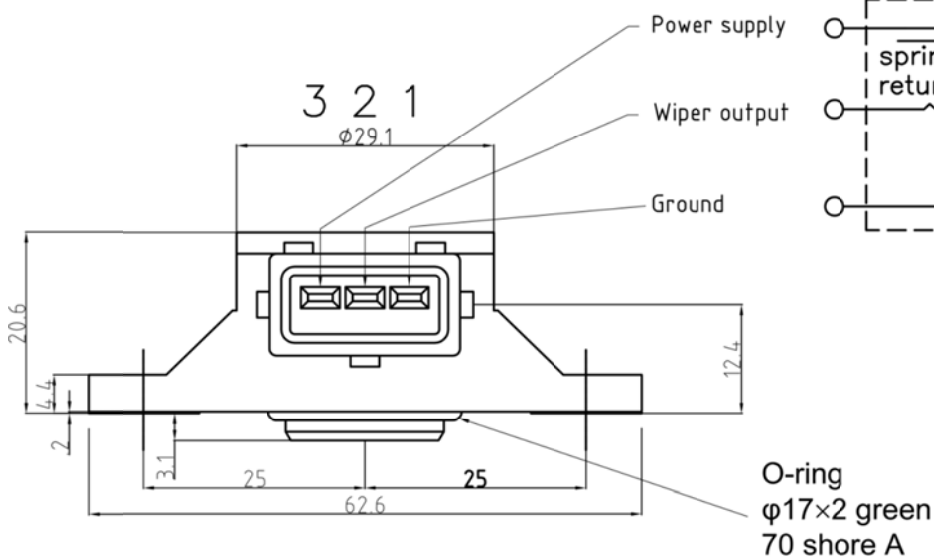
---

Salt Spray:	250 hrs.
Humidity:	96 hrs., 93% RH at 40°C
Resistant to gasoline, engine oil, brae fluid & antifreeze	

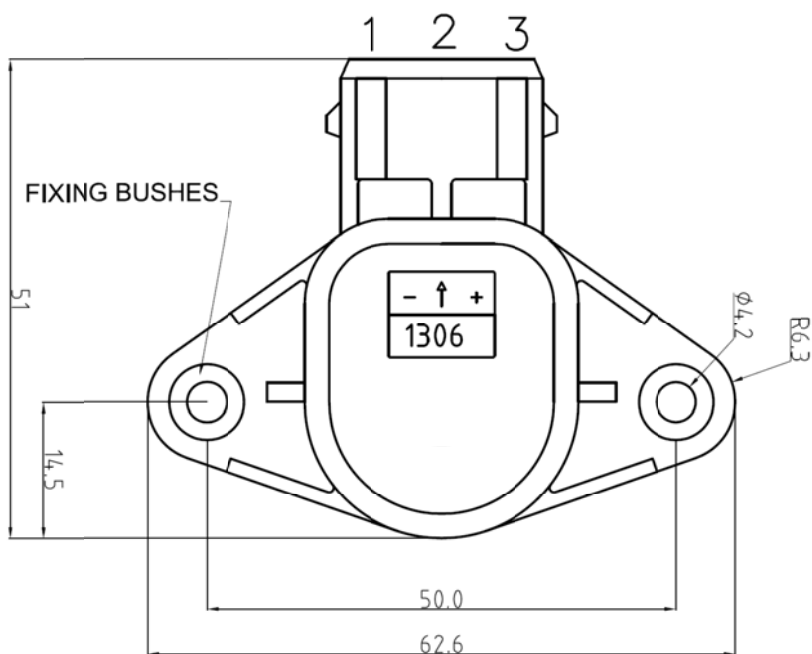
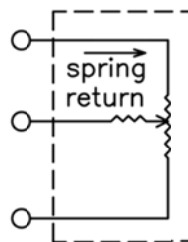
NOTE: These standard specifications have been met on existing production-tooled units that are tested on precise test equipment. Details are available including failure criteria. This data sheet does not constitute a warranty that the product will meet the above specifications while used in your application or attached to your test equipment.

HEADQUARTER  
Shirashian sanat co.  
No.419, 10<sup>th</sup> St., 1<sup>st</sup> Blvd.,  
Buali industrial estate  
6518114334 Hamedan,  
Iran  
Tel/Fax: 0098 8134383212-13  
Website:www.shirashianco.com  
Email:info@shirashianco.com  
Date: 04/23/2002  
Revised: 12/20/2012  
Version: 1.3

## Dimensional Details (mm)

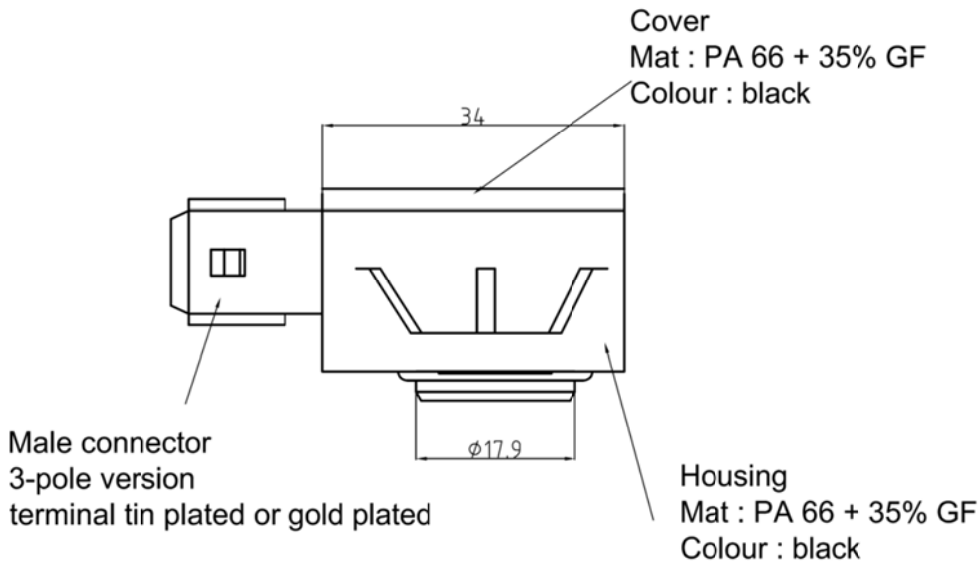


Circuit Diagram



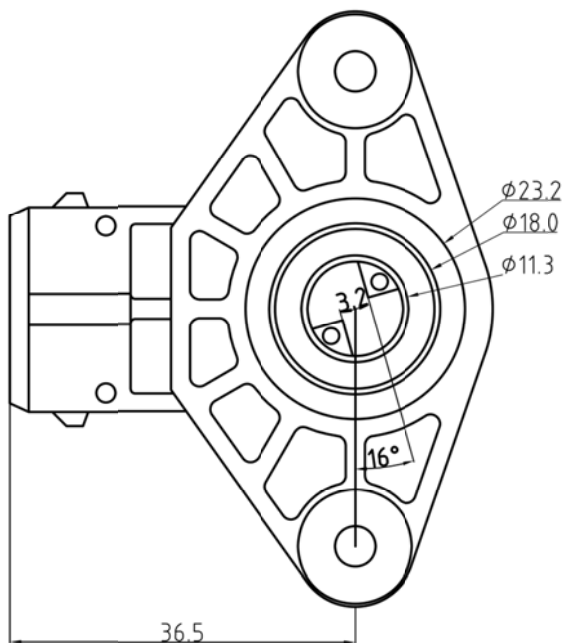
SG-512 Series

HEADQUARTER  
 Shirashian sanat co.  
 No.419, 10<sup>th</sup> St., 1<sup>st</sup> Blvd.,  
 Buali industrial estate  
 6518114334 Hamedan,  
 Iran  
 Tel/Fax: 0098 8134383212-13  
 Website: www.shirashianco.com  
 Email: info@shirashianco.com  
 Date: 04/23/2002  
 Revised: 12/20/2012  
 Version: 1.3



## TPS in First Mechanical Stop

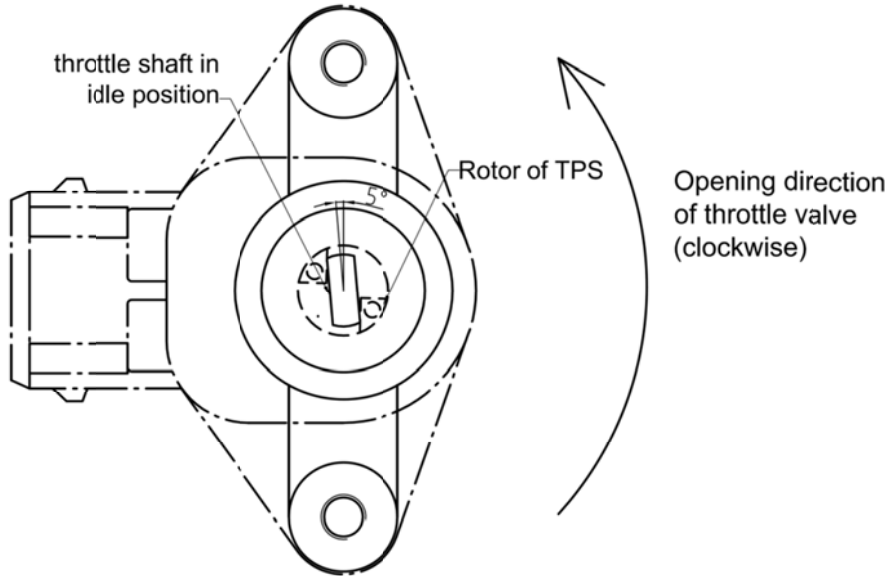
Note the viewpoint  
(this is a back viewpoint, attention to the connector)



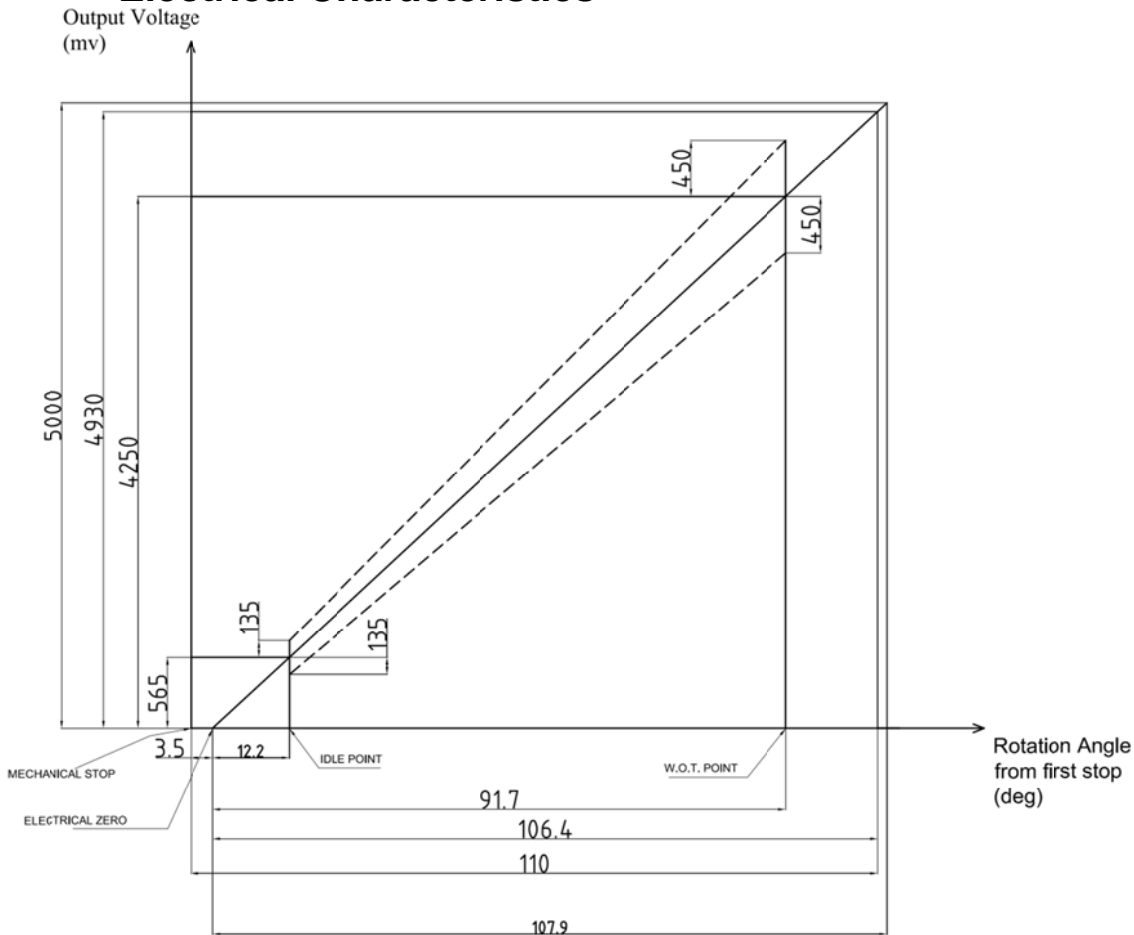
HEADQUARTER  
 Shirashian sanat co.  
 No.419, 10<sup>th</sup> St., 1<sup>st</sup> Blvd.,  
 Buali industrial estate  
 6518114334 Hamedan,  
 Iran  
 Tel/Fax: 0098 8134383212-13  
 Website:www.shirashianco.com  
 Email:info@shirashianco.com  
 Date: 04/23/2002  
 Revised: 12/20/2012  
 Version: 1.3

## Throttle Shaft Drawn in Idle Position

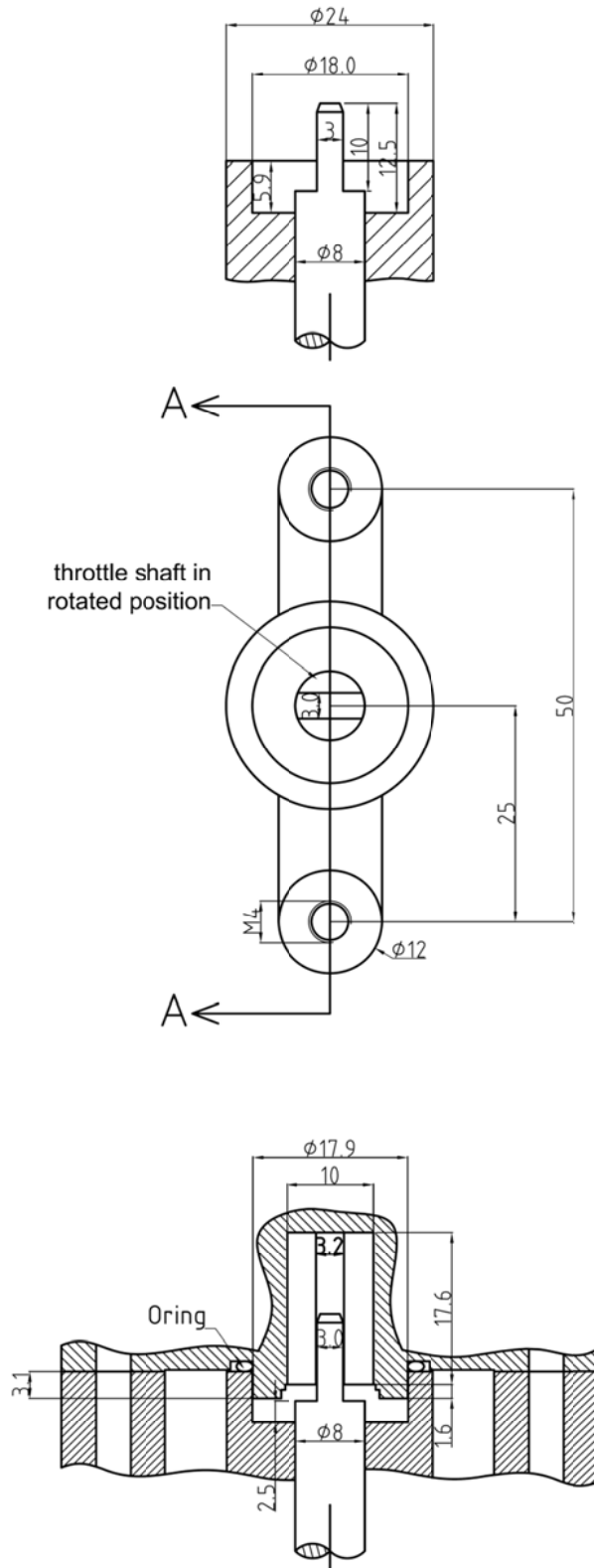
Note the viewpoint  
(this is a front viewpoint, attention to the connector)



## Electrical Characteristics



# Throttle Shaft Drawn in Rotated Position section A-A



SG-512 Series

HEADQUARTER  
Shirashian sanat co.  
No.419, 10<sup>th</sup> St., 1<sup>st</sup> Blvd.,  
Buali industrial estate  
6518114334 Hamedan,  
Iran  
Tel/Fax: 0098 8134383212-13  
Website:www.shirashianco.com  
Email:info@shirashianco.com  
Date: 04/23/2002  
Revised: 12/20/2012  
Version: 1.3