BS-FU100H-300-D3EC
Technical specifications of 3 Axis FOG

Figure 1　the photo of BS-FU100H-300-D3EC

Table 1　The Main Characteristics Of Gyros

Parameter	BS-FU100H-300-D3EC
Range of measured angular rate, deg/sec	±300
Bias drift at fixed temperature, deg/h (100s)	≤0.003
Bias drift at temperature range from -40℃ to +60℃, deg/h	≤0.02
Scale factor repeatability，%	≤0.0005
Magnetic sensitivity	0.01º/h/Gs
Random walk, deg/$\sqrt{h}$	≤0.0004
Bandwidth, Hz	≥100
Power consumption, W	≤7
Start up power consumption，W	≤10 (without power off in first 3 secs)
Power supply	5V±0.2
Start up time, min	1
Operational temperature	-40℃ to +60℃
Dimensions, mm	∅90×26(head) 96×96×33（body）
Weight(net), kg	≤1.5
Output	RS422/RS485

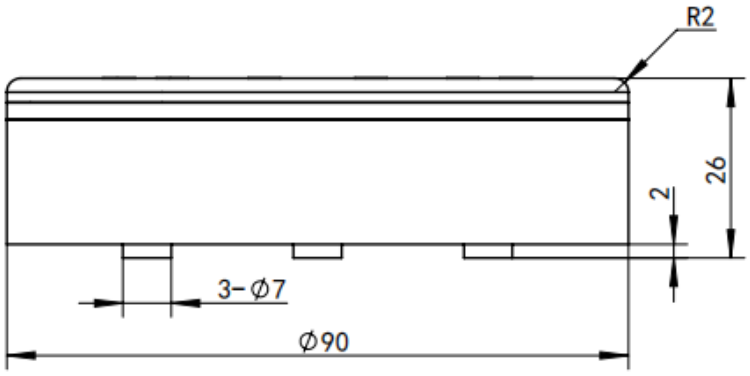
1. power supply

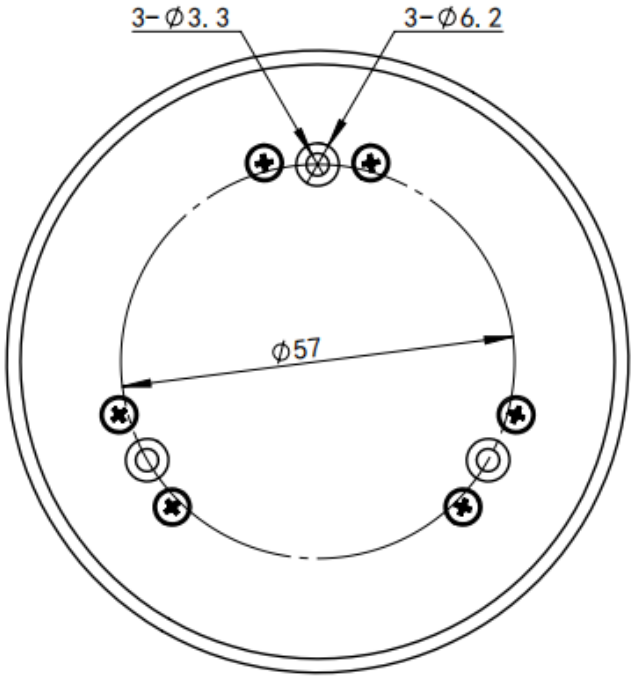
Requirement of power supply		
Voltage range (DC), V	Current output, A	Ripple wave of power supply, mV

+5±0.2	≥2	≤50

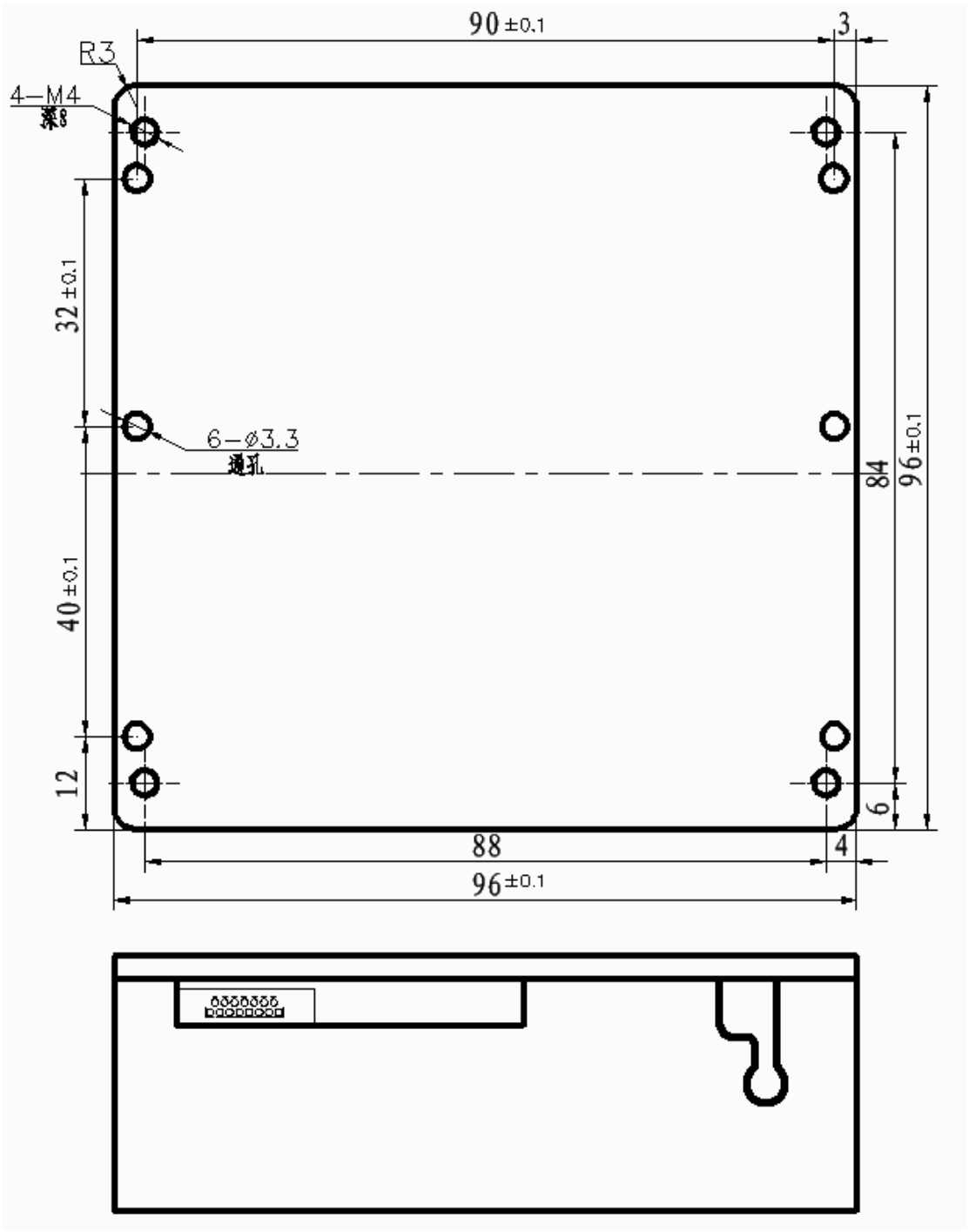
Attention! without power off in first 3 secs.

The head dimensions:



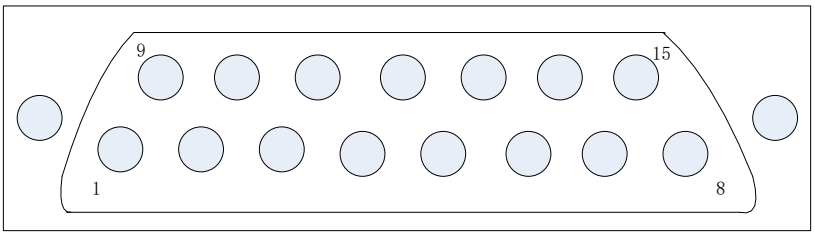


The body dimensions and the connector



2. connector

The connector J30JZLN15ZKWA000.



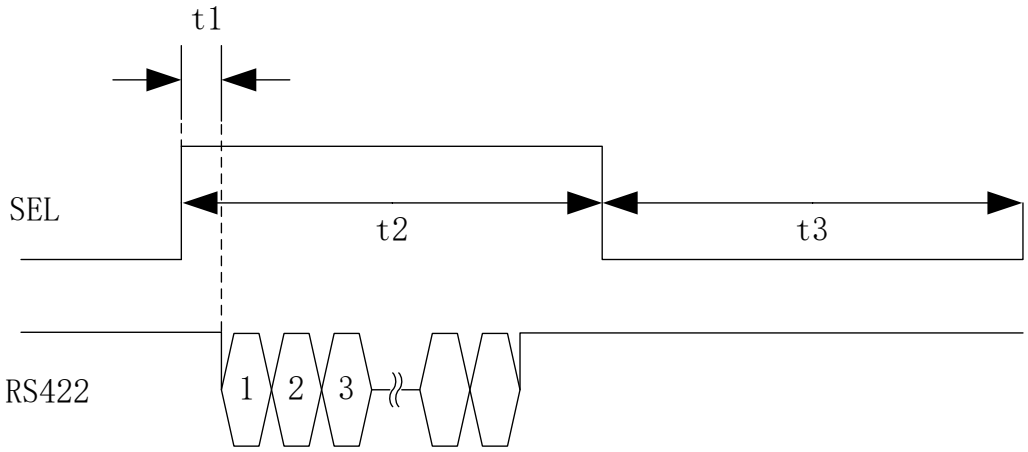
Purpose	Pin No.	Designation	Description
Input power supply	1,9	+5V	+5±0.2V，2A $V_{ripple.}$≤50mV pk-pk max.
	2,10	GND	
Serial interface	6	Tx+	RS422 interface EIA-422
	14	Tx-	
Synchronization	8	SEL+	Input for synchronization signal
	15	SEL-	

Attention! The device doesn't have protection from wrong connection. Connection error or over-voltage delivery can be the cause of device failure or its quick degradation.

Time between device switching off and again switching on (and other) must be not less than 1 minute.

3. 通讯 communication protocol

Gating signal is TTL, its drive current should not less 10mA. The scheme of the data communication see figure 4.



Parameter	Min	Typ	Max	Unit
BaudRate		614.4		Kbps
Output Delay (t1)			5	μs
Pulse Width High (t2)	10			μs
Pulse Width Low (t3)	100			μs
Sample Rate	100		1000	Hz

figure 4 scheme get data from three gyros

Gating signal is TTL, its drive current should not less 10mA. Gyro signal processing cir cuit is opto-coupler signal, it also sends angle incremental information and temperature inf ormation through the serial port when the rising signal difference between positive and n egative reachs 5μs. Data communicating agreement shall match the serial port rules of RS-422, transporting port rate is 614.4kbps and the format is as follows:

55AA	Data length N	Date 1	Data 2	…	Data n	Checksum

Instructions for the data format：

a) Header（55AA）;

b) Data length N＝18 bytes，it is the quantity of bytes from data 1 to data n, the meaning of each bytes are defined as following：

c) Data 1～data 3：X gyro incremental angle，first lower than high；

d) Data 4～data 6：Y gyro incremental angle，first lower than high；

e) Data 7～data 9：Z gyro incremental angle，first lower than high；

f) Data 10～data 11：X gyro temprature information，first lower than high；

g) Data 12～data 13：Y gyro temprature information，first lower than high；

h) Data 14～data 15：Z gyro temprature information，first lower than high；

i) Data 16～data 17：frame code，first lower than high；

j) Data 18：condition of gyro.

k) Each byte has one starting position, 8 data positons and 1 stop position, without odd-even checking position；

l) Checksum is the sum of data length and n data, data checking is realized by Hardware.

Data N is the condition of gyro，this data own one byte，the format is as following:

BIT	7	6	5	4	3	2	1	0
Condition	Retention	Z Gyro controlling condition	Y Gyro controlling condition	X Gyro controlling condition	Retention	Z gyro light intensity signal	Y gyro light intensity signal	X gyro light intensity signal

a) Bit0 value 1 indicates X gyro light intensity signal is normal, while value 0 indicates that is

abnormal.

b) Bit1 value 1 indicates Y gyro light intensity signal is normal, while value 0 indicates that is abnormal.
c) Bit2 value 1 indicates Z gyro light intensity signal is normal, while value 0 indicates that is abnormal.
d) Bit3 is reserved, value is 1.
e) Bit4 value 1 indicates X gyro conrolling is normal, while value 0 indicates that is abnormal.
f) Bit5 value 1 indicates Y gyro conrolling is normal, while value 0 indicates that is abnormal.
g) Bit6 value 1 indicates Z gyro conrolling is normal, while value 0 indicates that is abnormal.
h) Bit7 is reserved, value is 1.

usage and environmental requirement

BS-FU100H-300-D3EC consists of body and heads, there are lines between the head and the body, the lines' bending radius is demanded not less than 30mm. The gyros are recommended for using in an enclosed environment, and keep the gyros dried, otherwise, it will do damage to the precision and service life of gyros.