2012 Edition



Pressure Transducer Inertial Navigation Sensor Catalog



XI'AN CHINASTAR M&C LIMITED

Xi'an Chinastar M&C LTD was established in 1996 with 55 million RMB registration investment. The company specializes in sensor and IOTS research, production and sales. The main products includes pressure sensor and transmitter, inertial sensor, environmental sensors, and solution and consultation services on sensors.

Innovation is the basic element of the company. The self developed products has received 61 national patents, in which 6 patents are invention ones.

The company has been certified with ISO9001 quality system, CMC, TUV CE, Intrinsically safe certificate, Rohs certificate, and CDNV7 ATEX, and mining security certificate.

Chinastar products win favorable comments from customers due to advanced technology, excellent quality, fast delivery, and in time services. The products are used in industrial and military fields and exported to 52 countries including USA, Germany, Russia, Italy, South Korea, Brazil, India,etc. Export value is 30% of the sales volume in recent years.

Chinastar has the following titles,

A member of Sensor Division of China Electronic Components Society A member of Shaanxi IOTS Alliance Shaanxi Hi-Tech Company Shaanxi Intellectual Property Advanced Company Shaanxi, Xi'an Famous Brand

Chinastar will hold the successful concept, technology being the base, market being the direction, customer satisfaction being the target, to explore the global market. In 2012, the production capacity will reach 1 million units of various sensors. We will work toward to meet the customers' requirement and be an innovative and influential company in the sensor industry.









Invention Patents





CS-PT100 Economical Pressure Transducer

Range: 200kPa-35MPa Output: 4-20mA, 0-5V Accuracy: 0.5% F.S Current: 24Vdc, Non-polarity wire Voltage: 24Vdc/ac(dc/ac means dc and ac both usable) Elec. Connect: Hurischman Plug Port: M20X1.5, G1/2, NPT1/2 Others: overvoltage and overload protection, IP65 Protection, overload 250% Applications: Gas,liquid, water supply, addwet machine, hydraulic system Compliant: CMC,CE

CS-PT200 Pressure Transducer



Range: 0.2MPa-35MPa Output: 4-20mA, 0-5V Accuracy: 0.5% F.S Current: 24Vdc Voltage: 24Vdc/ac(dc/ac means dc and ac both usable) Display: LCD's back light Port: M20X1.5, G1/2, NPT1/2 Temperature: up to 150°C with cooling ring Note: CE, EX



CS-PT210A/B Pressure Transducer

Range:0-25MPa Output: RS485(CS-Pt210B) simultaneous output: 4-20mA Accuracy: 0.25% F.S Power:12-30V Port: M20X1.5 Temperature: -40 - 85°C

CS-PT211I Proof Digital Pressure Transducer



Range: 0-20Kpa.....60MPa Output:RS485 Accuracy: 0.25%F.S Power: 12VDC Port: M20X1.5 Temperature: -25 - 85°C Display: 4 -bit display ExdIIBT5



CS-PT220A Smart Hart Pressure Transducer

Range: 0-20Kpa.....60MPa Output:4-20mA and Hart Accuracy: 0.25%F.S Power:12-30VDC Port: M20X1.5, G1/2 ,NPT1/2



CS-PT300 Pressure Transducer

Range: -0.1MPa-0MPa, 0-0.03MPa, 0-100MPa Output: 4-20mA, 0-5V,0.5-4.5VDC Accuracy: 0.5% F.S, 0.25%F.S Current: 24Vdc, Non-polarity wire Voltage: 24Vdc/ac(dc/ac means dc and ac both usable) Elec. Connect: Hurischman Plug Port: M20X1.5, G1/2, NPT1/2 Others: overvoltage and overload protection, IP65/67 Protection, overload 250% Note: CE

CS-PT330 High Accuracy Pressure Transducer



Range: 0-10KPa Working temperature: -20-80°C Compensated temperature: -20-80°C Accuracy: 0.5%F.S Output:4-20mA Power: 15VDC IP67



CS-PT400 Level Transducer

Range: 0-2m....10m
Output:4-20mA,0-5V
Accuracy: 0.25%F.S, 0.5%F.S
Current: 12-30VDc, non-polarity
Voltage: 24Vdc/ac(dc/ac means dc and ac both usable)
Structure: Throw in, screw installation
Protection: IP68
Others: five level sealing design, high reliability, non-polarity wire, overvoltage and overload protection, optional cable resistant to strength and corrosion.
Applications: water supply, level of river and lake
Compliant: CMC,CE





CS-PT400M Segregate Level Transducer

Range: 2-200m Technical parameter same as PT400,separate the sensor with the transmitting circuit

CS-PT420 Geothermal Water Level Transducer

Range: 10-300m Technical parameter same as PT400 Especially designed for geothermal water level 80°C-100°C working stably Note: CM Patent No.2L200620078309.3



CS-PT440/450 Corrosive Proof Level Transducer

Range: 0.5-10m

Technical parameter same as PT400, especially designed for detecting liquid level resistant to acid &alkaline, Ceramic capacitive sensor, shell made of Teflon. Note:CM Patent No.2L200620078309.3



CS-PT460 Titanium Alloy Level Transducer

Range: 5-500m Technical parameter same as PT400, especially designed for sea level, titanium alloy shell and special cable ensure it can work under sea water stably.

CS-PT480 Digital Level Transducer

Range: 0-2.....200water Working temperature: -40 - 85°C Accuracy: 0.5%F.S Output:RS485 Power:10-30VDC Protection: IP68 Structure: Throw in, screw installation



CS-WPT400 Level Transducer Embeedded Temperature

Range: 0-3....200water Working Temperature: -40 - 85°C Accuracy:0.5%F.S Output:4-20mA, 1-5VDC,0.5-4.5VDC Protection: IP68 Others: five level sealing design, high reliability, non-polarity wire, overvoltage and overload protection, optional cable resistant to strength and corrosion.



CS-WPT410 Digital Level Transducer Embedded Temperature

Range: 0-2....200water Working Temperature: -40-85°C Accuracy:0.5%F.S Output: RS485 Power:10-30VDC Protection: IP68 Others: five level sealing design, high reliability, non-polarity wire, overvoltage and overload protection, optional cable resistant to strength and corrosion.

CS-PT500 Differential Pressure Transducer



Range: 0-5KPa......5000KPa Overload: 1.5 times Static pressure: three/ five/ten times , 20MPa Accuracy:0.25%F.S ,0.5%F.S Working temperature: -40-85°C Output:4-20mA, 0/1-5V, 0-10V Power: 10-30VDC, 8-36VDC/AC,11-30VDC/AC Port: M20X1.5 ,G1/2, G1/4

CS-PT500D Differential Pressure Transducer



Range: 0-5KPa......10000KPa Overload: 1.5 times Static pressure: three/ five/ten times Accuracy: 0.25%F.S,0.5%F.S Working temperature: -40-85°C Output:4-20mA, 0-5V, 0-10V Power: 10-30VDC, 8-30VDC/AC,11-30VDC/AC Port: M20X1.5,G1/2, G1/4

CS-PT600A Square Smart Pressure Transducer



Range: 0-2MPa......60MPa Overload: 1.5times Burst pressure: 3times Accuracy:0.5%F.S Working temperature: -20-60°C Output: 5-bit relay, RS485 Power:10-30VDC Port: M20X1.5, G1/2,G1/4



CS-PT602 Series Digital Pressure Transducer

Range: 0- 20bar....600bar Output: RS485 Power: 10-30VDC,3.6VDC(battery) Accuracy: 0.5%F.S ,1%F.S Temperature: -10- 60 °C Pressure port: M12 X1.5, R1/2,G1/4,G1/2,NPT1/2, etc



CS-PT605 Series Pressure Data Logger

Range: 0- 20bar....1000bar Output: RS485 ,USB Power: 9VDC / 3.6VDC(Li battery) Accuracy: 0.5%F.S Temperature: -10- 60 °C Pressure port: M12 X1.5, R1/2 ,G1/4,G1/2,NPT1/2, etc



CS-PT606 Series High Precision Digital Pressure Transducer

Range: 0- 20bar....1000bar Output: RS485 (digital output) / 0-5V (analog output) Power: 10-30VDC Accuracy: 0.25%F.S, 0.1%F.S Temperature: -40- 80 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc

CS-PT607 CAN Pressure Transducer



Range: 0- 1bar....600bar Output: CANopen Protocol (CAN2.0A and CAN2.0B) Communication speed: 1Mbps Maximum distance: 10Km Power: 10-30VDC Accuracy: 0.25%F.S,0.1%F.S Temperature: -40- 85 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc



CS-PT700 Absolute Pressure Transducer

Range: 0- 0.1bar....400bar Output: 4 - 20mA ,0 - 5V ,0 - 10V Power: 10-30VDC, 6-24VDC, 10-36VDC , 11-30VDC Accuracy: 0.25%F.S,0.5%F.S Temperature: -40- 80 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc



CS-PT800 High Temperature Pressure Transducer

Range: 0- 1bar....2000bar Output: 4 - 20mA,0 - 10mA,0 - 20mA,0 - 5V , 0 - 10V Power: 12-30VDC Accuracy: 0.1%F.S ,0.25%F.S,0.5%F.S Temperature: -40- 80 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc

CS-PT830 Pressure Transducer For Heavy Machinery



Range: 0- 50bar....800bar Burst pressure: 10 times of range Output: 4 - 20mA, 1 - 5V,0.5 - 4.5V Power: 10-30VDC, 8-30VDC,5VDC Accuracy: 0.5%F.S Temperature: -40- 150 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc



CS-PT1000 Series Economical Pressure Transducer

Range: 0- 5bar....600bar Output: 4 - 20mA ,0 - 5V ,1 - 5V , 0.5 - 4.5V , 0 - 10V Power: 10-30VDC ,8 -30VDC ,5V,12-30VDC Accuracy: 0.5%F.S Temperature: -40- 85 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc



CS-PT1010 Series Pressure Transducer

Range: 0- 5bar....600bar Output: 4 - 20mA, 0 - 5V,0 - 10V Power: 10-30VDC,8 -30VDC, 12-30VDC Accuracy: 0.5%F.S Temperature: -40- 125 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc

CS-PT1100 Series Pressure Transducer For Air Compressors



Range: 0- 5bar....50bar Output: 4 - 20mA,0.5 - 4.5V Power: 10-30VDC,5VDC Accuracy: 0.5%F.S , 1%F.S, 2%F.S Temperature: -40- 85 °C Pressure port: R1/2, G1/4,NPT1/2, 7/16-20UNF, etc



CS-PT1200 Series Pressure Transducers For HVAC Field

Range: 0- 2bar....600bar Output: 4 - 20mA ,0.5 - 4.5V Power: 10-30VDC, 5V Accuracy: 0.25%F.S,0.5%F.S,1%F.S Temperature: -40- 100 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc

CS-PT1270 Series High Precision Pressure Transducer With Temperature Compensation



Range: 0- 2bar....60bar Output: 4 - 20mA ,0.5 - 4.5V,1 - 5V Power: 10-30VDC ,8- 30V Accuracy: 0.5%F.S Temperature: -40- 125 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc



CS-PT1300 Series Pressure Transducer For Auto Application

Range: 0- 2bar....600bar Output: 0 - 5V, 0.5 - 4.5V,1 - 3V Power: 10-24VDC,8- 30V, 5VDC Accuracy: 1 %F.S, 2%F.S Temperature: -40- 125 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, etc

CS-PT2000 Series Pressure Transducer For Mining Equipment



Range: 0- 2bar....200bar Output:4 - 20mA, 0 - 5V,0 - 10V Power: 10-30VDC,12 - 30 VDC Accuracy: 0.1 %F.S,0.5%F.S Temperature: -40- 85 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, KJ10, etc



CS-MARS Series pressure Transducer For Aviation And Express Train

Range: 0- 2bar....200bar Output:4 - 20mA,1 - 5V , 0.5 - 4.5V Power: 10-30VDC ,8 - 30 VDC,5V Accuracy: 0.1 %F.S Temperature: -40- 85 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, KJ10, etc



CS-PSW/PT622 Series Adjustable Pressure Switch

Range: 0- 1bar....600bar Output: Relay output Load: 0.5A,125VDC,1A 30VDC Power: 24 VDC Accuracy: 2%F.S,1 %F.S,0.5%F.S Temperature: -40- 60 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, KJ10, etc

CS-IPT608/PT350 Series Low Power Consumption Wireless Pressure Transducer



Range: 0- 2bar....600bar Communication protocol: Zigbee Power: 3.6 VDC Battery Accuracy: 0.5%F.S Temperature: -40- 60 °C Pressure port: M12 X1.5,R1/2, G1/4,G1/2,NPT1/2, KJ10, etc



CS-ISN-01 Series Zigbee Coordinator

Input:4-20mA,RS485,Modbus, IEEE802.15.4, Zigbee Power: 10-30VDC ,12 - 30 VDC Accuracy: 0.1 %F.S Temperature: -40- 60 °C

CS-ISN-02/03 Series GSM/GPRS Coordinator



Input:4-20mA Communication port: RS485 Speed: 300bps-115200bps Operating frequency: 850/900/1800/1900MHz Communication Protocol: DDP protocol Antenna: SMA external type Power: 10-30VDC Accuracy: 0.1 %F.S Temperature: -40- 60 °C



Accessories

Transducer indicator 5-bit Lcd display with back light 4-20mA current loop powerd Calibrating and do setting on panel 2-way alarm output



BOX Breathable Waterproof Junction Box

Breathable: Waterproof Junction widely used to kinds of level Transducer Note: Patent No. 200820222718.5



CS-ARS-01/01A Single Axis Gyro

■ Measurement Range: ±75°/S (01) ±150°/S (01A) Bias Stability: ≤0.05°/S(01)

≦ 0.1°/S(01A)

Bandwidth: ≥40Hz Size: 38mm x 38mm x 15.5mm

 CS-ARS-01 RS485 Digital Output CS-ARS-01A Analog Voltage Signal Output Calibration Temperature Range Non-Linearity Calibration Small Size, Low Weight, High Shock Survivability
 Patent No.: 200420042333X

CS-ARS-03 Single Axis Gyro

■ Power supply:5±0.25 VDC



Current: ≦8mA Zero Bias:2.5±0.1VDC (25°C) Zero Bias Stability: ≦0.1°/s Non-linearity: ≦0.5%F.S Resolution: ≦0.1°/s Output:0-5V Temperature Range:-40- 85°C Dimension:29mm×29mm×13.5mm

 Measurement range can be customized. Maximum range reaches ±5500°/s Bandwidth can be customized. Maximum range reaches 400Hz Small dimension and light weight Impact strength reaches 2000g

CS-ARS-09/09A Single Axis Gyro

Measurement Range: ±5500°/S (09) ±9000°/S (09A)



- Bandwidth: ≥60Hz Size: 18mm x 18xmm 7mm(09) 14mm x 14mmx7mm(09A)
- Wide Measurement Range
 Secondarily Integrated Thick Film and Carrying Jointing Technics
 Metal Hermetic Encapsulation
 High Integration, Compact Structure, strong
 Anti-Jamming
 High Shock Survivability

Small Size, Low Weight Patent No.: 200830117418.6 200830117419.0



CS-ARS-02/02C/04 Single Axis Gyro

- Measurement Range: ±100°/S Bias Stability: ≤0.1°/S Bandwidth: ≥40Hz Size: 38mm x 28mm x 12.8mm (02) 28mm x 18mm x 14.8 mm (02C)
- Φ30mm x 13.9mm (04) ■ Wide Measurement Range Small Size, Low Weight High Shock Survivability
- Patent No.: 200630089716 x 200630089718.9 200630089852.9 200410026355.4 200830118398.4 200610105365.6

CS-ARS-07 Single Axis Gyro



- Measurement Range: ±50°/S Bias Stability: ≤0.02°/S Bandwidth: ≥60Hz Size: Ф41mm x 17mm
- High Bias Stability, Low Noise RS485 Digital Output Calibration For Temperature, Non-Linearity, Noise



CS-ARS-10/10A Single Axis Gyro

■ Power supply:5±0.25 VDC

Current: ≤20mA Zero bias:2.5±0.1VDC(25°C) Zero bias stability: ≤0.05°/s Non-linearity: ≤0.2%F.S Resolution: ≤0.1°/s Output:0- 5V and RS485 Temperature range:-40- 85°C Dimension:38mm×28mm×12.8mm

 Measurement range can be customized. Maximum range reaches ±1000°/s
 Excellent linearity
 Small dimension and light weight
 Impact strength reaches 4000g

Inertial Navigation Sensor



CS-ARS-12/12A/12B Single Axis Gyro

■ Measurement Range: ±100°/S Bias Stability: ≤0.015°/S Bandwidth: ≥50Hz Size: Ф41mm x 15mm(12/12A) Ф41mm x 17mm(12B)

 High Precision, Low Noise Optional Measurement Range and Bandwidth High Resolution Small Size,Low Weight



CS-ARS-14 Single Axis Gyro

- Measurement Range: ±100°/S Bias Stability: ≤0.015°/S Bandwidth: ≥60Hz Size: 33mm x 33mm x 18.5mm
 High Bias Stability, Low Noise Measurement Range and Bandwidth
- Measurement Range and Bandwidth is optional Calibration Temperature Range
- Noise Processed Optional Output Signal (Unipolar /Bipolar Difference)

Electric Current/Voltage, Electromagnetism Disturbing Safety Function

Patent No.: 200510096134.9

CS-ARS-17 Single Axis Gyro



- Power supply:5±0.25 VDC Current: ≤10mA Zero bias:1.6±0.1 VDC (25℃) Zero bias stability : ≤0.05°/s Non-linearity: ≤1%F.S Resolution: ≤0.1°/s Output:0- 5V Temperature range:-40- 85℃ Dimension:28mm×18mm×14.8mm
- Measurement range can be customized Maximum range reaches ±1000°/s Small dimension and light weight Excellent impact resistance Economically designed

CS-2ARS Dual Axis Gyro



■ Measurement Range: ±100°/S Bias Stability: ≤0.1°/S Bandwidth: ≥100Hz Size: 29.6mm x 43mm x 29.6mm

Wide Measurement Range Small Size, Low Weight High Shock Survivability



CS-ARS-15A/15D Single Axis Gyro

Measurement Range: ±150°/S(15A) ±250°/S(15D)

Bias Stability: $\leq 0.015^{\circ}/S(15A)$ $\leq 0.008^{\circ}/S(15D)$ Bandwidth: $\geq 60Hz$

Size: 45mm x 24mm x 21mm (15A) 47.5mm x 39.6mm x 29 mm(15D)

High Bias Stability
 Calibration Temperature Range
 Combined with Data Fusion Technology
 RS485 Digital Output/Voltage Signal Output

CS-ARS-18 Single Axis Gyro Power supply:4.5- 5.5 VDC

Zero bias stability: ≤0.012°/s Non-linearity: ≤0.2%F.S

Current: ≤ 30 mA



Resolution: ≤0.02°/s Output:RS422 Temperature range:-40- 85℃ Dimension:38 mm×38 mm×20 mm High zero bias stability Excellent linearity Full temperature compensation RS422 output

Excellent impact and vibration resistance



CS-2ARS-02A/02C Dual Axis Gyro

- Measurement Range: ±100°/S Bias Stability: ≤0.015°/S Bandwidth: ≥50Hz Size: 40mm x 38mm x 24mm (02A) 45mm x 38mm x 24mm (02C)
- Low Noise, High Bias Stability Voltage Signal Output



CS-2ARS-04 Dual Axis Gyro

- Measurement Range: ±75°/S Bias Stability: ≤0.05°/S Bandwidth: ≥40Hz Size: 48mm x 35mm x 48mm
- Wide Measurement Range (customized) RS485 Digital Output Calibration Temperature Range Triaxial crossed Coupling Calibration Small Size, Low Weight



CS-3ARS-02B 3 Axis Gyro

- Measurement Range: ±100°/S Bias Stability: ≤0.1°/S Bandwidth: ≥40Hz Size: 48.5mm x 36mm x 30mm
- Wide Measurement Range(customized)
 Small Size, Low Weight
 High Reliability



CS-3ARS-04 3 Axis Gyro

- Measurement Range: ±75°/S Bias Stability: ≤0.05°/S Bandwidth: ≥40Hz Size: 48mm x 35mm x 48mm
- Wide Measurement Range (customized) RS485 Digital Output Calibration Temperature Range Small Size, Low Weight

CS-3ARS-05 3 Axis Gyro



■Measurement Range: ±250°/S (X axis) ±100°/S (Y axis /Z axis) Bias Stability: ≤0.015°/S Bandwidth: ≥50Hz

- Size: 76mm x 76mm x 38mm
- Low Noise, High Precision
 Wide Measurement Range (customized)
 RS485 Digital Output
 Calibration Temperature Range
 Triaxial crossed Coupling Calibration
 Small Size, Low Weight



CS-3ARS-06 3 Axis Gyro

 Power supply:4.5- 5.5 VDC Current: ≤30 mA Zero bias: ≤1.5±0.1 VDC Non-linearity: ≤1%F.S Resolution: ≤0.1°/s Output:0- 5V Temperature range:-40- 85℃ Dimension:28mm×18mm×14.8mm
 Economically designed Measurement range and bandwidth can be customized. Maximum range reaches ±400°/s Small dimension and light weight High stability Excellent impact and vibration resistance

Inertial Navigation Sensor



CS-3ARS-07 3 Axis Gyro

- Power supply:4.5- 5.5 VDC Current: ≤ 30 mA Zero biad: ≤0.1°/s Non-linearity: ≤1%F.S Resolution: ≤0.1°/s Output:RS422 Temperature:-40- 85℃ Dimension:48 mm×38 mm×18mm
- Economically designed Measurement range and bandwidth can be customized. Maximum range reaches ±400°/s Small dimension and light weight RS422 Output High stability Excellent impact and vibration resistance

CS-LAS-05 Single Axis Accelerometer

- Collaboration Jos
- Measurement Range: ±20g Bandwidth: 0- 22KHz Size: 35mm x 28mm x 14.5mm
- Wide Measurement Range (customized) Small Size, Low Weight
 Frequency response : up to 22KHZ
 High Reliability



CS-LAS-03 Single Axis Accelerometer

- Measurement Range: ±10 g Bandwidth: 0- 1500Hz Size: 23mm x 32mm x 21mm
- Wide Measurement Range (customized) Small Size, Low Weight Magnetic Pulling Installation High Reliability

CS-LAS-04 Single Axis Accelerometer



 Measurement Range: ±2000 g Bandwidth: 0- 1500Hz Size: 12.5mm x 8mm x 9.5mm
 Wide Measurement Range (customized) High Frequency Response Small Size, Ligjht Weight Application: shock test and vibration detect High Reliability

CS-2LAS/CS-2LAS-02

Single Axis Accelerometer

- and the second s
- Measurement Range: ±2g Bandwidth: ≥50Hz
- Size: 18.8mm x 12.7mm x 8.4mm
 Wide Measurement Range Small Size, Low Weight Self-testing Function High Reliability

CS-2LAS-03 Dual Axis Accelerometer



CS-2LAS-01 Dual Axis Accelerometer

- Power:6- 8 VDC
 - Power Current: ≤60 mA
 - Zero Bias:±0.1g
 - Zero Bias temperature drift:±0.1g
- Non- Linearity: ≤0.5%F.S
- Resolution:≦5mg
- Output:RS485
- Temperature range:-40- 85°C
- Size: 48mm×38mm ×18 mm
- Wide Measurement Range, Optional ±2- ±70g Small Size, Low Weight Full temperature range compensated, non-Linearity correction



■ Power:+6±0.05 VDC Power current: ≤6 mA Zero Bias:2.5±0.1VDC Non-Linearity: ≤0.5%F.S Resolution: ≤1mg Output:0- 5V Temperature range:-40- 85°C Size: 22.8 mm×22.8 mm×20.6 mm

Measurment range up to ±10g
 Small Size, Low Weight
 Magnetic type installation
 Self-testing function
 High Reliability



CS-3LAS 3 Axis Accelerometer

CS-3LAS-02 3 Axis Accelerometer

■ Measurement Range: ±10g

Size: 55mm x 55mm x 35mm

 High Bias Stability, Low Noise Wide Measurement Range Small Size, Low Weight High Reliability

Calibration Temperature range

Triaxial crossed coupling Calibration

Bandwidth: \geq 60Hz

Digital Output

- Measurement Range: ±3g Bandwidth: 0- 500Hz Size: 19mm x 13mm x 8.5mm
- Wide Measurement Range Small Size, Low Weight Self-test Function High Reliability



CS-3LAS-01 3 Axis Accelerometer

- Measurement Range: ±2g Bandwidth: 0- 400Hz Size: 55mm x 55mm x 35mm
- Wide Measurement Range Small Size, Low Weight
 High Reliability
 Digital Output
 Calibration Temperature range

CS-3LAS-03 3 Axis Accelerometer

- Measurement Range: ±20g Bandwidth:0- 10KHz Size: 40mm x 26mm x 15mm
- Wide Measurement Range Small Size, Low Weight
 Frequency Response : up to 22KHZ
 High Reliability

CS-i2LAS Wireless Accelerater (Scale products)

- Measurement Range: ±1g System Accuracy: ±0.5%F.S Size: 38mm x 38mm x 20mm
- Battery Powered, wireless communcation Wide Measurement Range Small Size, Low Weight High Reliability

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CS-TAS-01 Single Axis Inclinometer

- Power: 24±2 VDC Power current: <40mA Zero Bias: ≤0.1° Accuracy: ≤1% F.S Resolution: ≤0. 1° Output:Digital pulse Temperature Range: -40- 5°C Size: 82mm×52mm×43 mm
- Wide measurement range Full temperature scale compensated Non-Linearity correction Digital pulse output



CS-TAS-05 Single Axis Inclinometer (Scale products)

- Measurement Range: ±90°, ±180° Accuracy: ±0.1%F.S Resolution:0.01° Bandwidth: 5Hz Size: 60mm x 60mm x 30mm
- Wide Measurement Range Calibration Temperature Range Non-Linearity Calibration RS485 Digital output
 IP66 Safety Grade



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Inertial Navigation Sensor



CS-TAS-06 Single Axis Inclinometer

■ Power:10- 30 VDC **Power current:** < 50Ma Zero bias: $\leq 0.1^{\circ}$ (25°C) Non-linearity: ≤0.2 % F.S **Resolution**: ≤0.01° Output: CS-TAS-05:4- 20mA CS-TAS-06:RS485 Temperature range:-40- 70 °C Size: 60mm×60mm×30mm

■ Wide Measurement range Full temperature scale compensated **Non-Linearity correction IP66** protection class

CS-2TAS-01/01E Dual Axis Inclinometer



Power:10 - 30VDC Power current: <20mA Zero bias: $\leq 0.2^{\circ}$ (25°C) Non-linearity: $\leq 0.5\%$ F.S **Resolution:** $\leq 0.1^{\circ}$ Output: CS-2TAS-01E:0.5- 4.5V CS-2TAS-01:RS485 Temperature range:-40- 70 °C Size:48 mm×38 mm×18 mm High resolution Full temperature scale compensated Non-linearity compensated and correction

CS-2TAS-02/02A Dual Axis Inclinometer



■ Power: 10-30VDC

High Shock Survivability

Range optional

Power Current: <20mA Zero Bias:0.2° (25°C) Non-linearity: ≤0.3 % F.S **Resolution:**≦0.05° Output:RS485 (CS-2TAS-02A Full temperature scale compensated) Temperature range:-40- 70 °C Size: 38mm×38mm ×15.5 mm Both Pitch and Roll supplied **Good Non-linearity High Resolution** Small Size,Low Weight



CS-2TAS-01A/B/D/F/G **Dual Axis Inclinometer**



■ Power:10- 30VDC Power current:<20mA Non-linearity: ≤0.5% F.S **Resolution**: $\leq 0.1^{\circ}$ Output:CS-2TAS-01A:0.5- 4.5V, Voltage output CS-2TAS-01B:RS232, Digital output CS-2TAS-01D:4- 20mA, Current output CS-2TAS-01F:RS485, Digital output **CS-2TAS-01G:** Pulse output Temperature range:-40- 70 °C Size: 82mm×52mm×43 mm

■ High resolution, Low Cost Full temperature scale compensated Non-linearity compensated and correction **Range optional**

CS-2TAS-02 Dual Axis Inclinometer

- Measurement Range: ±60° **Bandwidth: 5Hz** Size: 38mm x 38mm x 20mm
- Both Pitch and Roll Supplied **RS485 Digital Output** Small Size, Low Weight **High Shock Survivability**
- Patent No.: 200620136463.1 200830118401.2

CS-2TAS-03/05/06 Dual Axis Inclinometer

- Measurement Range: ±75° Accuracy: ±0.1%F.S Resolution:0.01° **Bandwidth: 5Hz** Interface Type: RS485 (03) 4-20mA (05) CAN Bus (06) Size: 60mm x 60mm x 30mm High Resolution
- **Calibration Temperature Range Non-Linearity Calibration** Water proof, Damp proof, Dust proof





GUD75 Dual Axis Inclinometer for Coal Mine

- Power:12±10% VDC **Power current:** <100mA Non-linearity: $\leq 0.3\%$ F.S Zero bias:±0.4° Zero bias temperature drift:0.1° **Resolution:**≦0.05° **Output:CAN** Temperature range:0-40°C Size:102mm ×90mm×52 mm Coal Safety certificate, No. SHHExC12.0350
- **High Resolution** Digital Can bus output, CANOPEN Agreement High stability, good resistance to interference **High shock Survivability**

CS-TSW-01/02 Inclinometer Switch



■ Power:24±3 VDC **Power current:** < 50mA Range:±35° Back error:±0.1° **Resolution**: $\leq 0.1^{\circ}$ Output:CS-TSW-01,Switch point output CS-TSW-02, OC output Temperature range:-40- 70°C

Size: 82 mm×52 mm×43 mm

■ High stability, resistance to interference **Resistance to impact** Resistance water, wet and dus

CS-2TAS-07A Dual Axis Inclinometer

■ Power:8- 26 VDC **Power current:** <5mA Non-linearity:±0.1° Zero bias:±0.2° (25°C) Zero bias temperature drift:0.1°

- **Resolution:**≦0.05° Output:RS485 Temperature range:-40-85°C Size: 82 mm×52 mm×43 mm
- Lower power consumption **Digital output RS485 Approval of Electromagnetic** compatibility, measurement certificate High ability resistance to impact Resistance water, wet and dus

CS-i2TAS (Wireless Inclinometer) (Scale products)

- Measurement Range: ±90° System Accuracy: ±0.5%F.S Size: 60mm x 60mm x 30mm
- Battery powered, wireless communication Wide Measurement Range Small Size, Low Weight **High Reliability**

CS-VG (CS-2TAS-04) Vertical Goroscope



- Pitch: ±90° Roll: ±180° Rolling angle Range:< 2°(RMS) Pitch Range: < 0.5°
- High Precision and Bias Stability **Real-time Measurement in Dynamic** Environment Both the Angular Signal and Angular Rate Signal Supplied Both the pitch and the roll Supplied



Roll: ±180° Rolling angle Range:< 2.5°(RMS) Pitch Range: < 0.6°

■ Real-time Measurement in Dynamic Environment Both the Angular Signal and Angular **Rate Signal Supplied** Both the pitch and the roll Supplied Small Size, Low Weight **Hight Reliability**

Inertial Navigation Sensor



CS-VG-05 Vertical Goroscope

■ Power:10- 30 VDC Power current: <70mA Picth range:±90° Roll range:±180° Static accuracy:0.8° Dynamic accuracy:2.5° Gyro Zero bias: <0.15% (25°C) Gyro Zero temperature drift: <0.15% Gyro Non-linearity: < 0.15 % F.S Acceleration Zero bias:<6mg Acceleration Zero bias temperature drift:<6mg Acceleration Non-linearity: <0.5% F.S Output:RS422 Temperature range:-40- +70℃ Size:72mm×45mm×20 mm Real-time Measurement in Dynamic

Environment Both Angular Signal and Angular Rate Signal Supplied Both Pitch and Roll Supplied Small Size, Low Weight High Reliability



CS-VG-09 Vertical Goroscope

■ Power supply: 5VDC Current:<30mA Pitch: ±90° Roll: ±180° Static accuracy: 0.6° Dynamic accuracy: 2.5° Bias: < 0.25°/s(25 ℃) Bias Drift: <0.25°/s Non-linearity: < 3 % F.S Acceleration Dias: <5mg Acceleration Bias Drift: <5mg Acceleration Non-linearity: < 0.5% F.S Output signal:RS422 Temperature range:-40- 70 ℃ Size: 72mm x 45mm x 20mm

Low consumption
 Both the Angular Signal and Angular Rate
 Signal Supplied
 Both the pitch and the roll Supplied
 Small Size, Low Weight

CS-ARAS

(Angular Rate Sensor + Dual Axis Accelerometer) ■ Measurement Range: ±100° (Gyroscope) ±1.8g (Accelerator)



±1.8g (Accelerator) Bandwidth: ≧40Hz Size: 70mm x 42mm x 27.5mm Z axis-Gyro, X-axis accelerator High reliability Small Size, Low Weight Used in stability control system of vehicles Patent No.: 200830118400.8

200820029995.4



CS-ARAS-01 Vehicles Gyro

- Power supply:5 VDC Current: < 30mA Bias:1.23±0.1VDC(Gyroscope) Non-linearity: ≤2% F.S(Gyroscope) Resolution: ≤0.1°/s(Gyroscope) Bias:1.6±0.1VDC (Accelerator) Non-linearity:1% F.S (Accelerator) Resolution:1mg (Accelerator) Output signal:0- 5V Temperature range:-40- 70°C Size:38 mm×38 mm×15.5 mm
 Z axis-Gyro, X-axis accelerator
- Analog voltage output Small Size, Low Weight Used in stability control system of vehicles



CS- ARAS-02/2ARAS-01 Vehicles Gyro

- Power supply:12±0.25 VDC Current:<30mA Bias:≦1°/s (Gyroscope) Non-linearity:≦0.5% F.S (Gyroscope) Resolution: ≦0.1°/s (Gyroscope) Bias:0.1g (Accelerator) Non-linearity:0.5% F.S (Accelerator) Resolution:1mg (Accelerator) Output signal:CS-ARAS-02,CAN output CS-2ARAS-02,RS485 output Temperature range:-40- 80℃ Size:68mm ×82mm ×27.5 mm
- High Reliability Small Size, Low Weight Used in stability control system of vehicles

CS-A2LAS (Scale products)

(Angular Rate Sensor + Dual Axis Accelerometer)

■ Measurement Range: ±100° (Gyroscope) ±1.8g (Accelerator)



Bandwidth: ≥40Hz Size: 70mm x 42mm x 27.5mm Z axis-Gyro, X/Y-axis accelerator Small Size, Low Weight High Reliability Tied motorcar sensor

Patent No.: 200620136207.2

CS-IMU-04 Inertial Measurement Unit Measurement Range: ±150°/s (Gyroscope)



±10 g (Accelerator) Non-Linearity: $\leq 0.3\%$ F.S (Gyroscope) $\leq 1\%$ F.S (Accelerator) Bias: ±0.2°/s (Gyroscope) 0.02 g (Accelerator) Bias Drift: 0.3%F.S (Gyroscope) 0.02 g (Accelerator) Bias Stability: ≤0.05°/s (Gyroscope) \leq 0.002g (Accelerator) **Resolution:** \leq 0.04°/s (Gyroscope) \leq 0.005 g (Accelerator) Bandwidth: \geq 50Hz Size: 48mm x 35mm x 48mm RS422 Digital Output **Calibration Temperature Range** Non-linearity Calibration, Triaxial Crossed **Coupling Calibration**

Low power Consumption, High Reliability



CS-IMU Inertial Measurement Unit

 ■ Measurement Range: ±100°/s (Gyroscope) ±10 g (Accelerator)
 Non-Linearity: ≤0.5%F. S
 Bias:2.5±0.1V
 Resolution: ≤0.06°/s (Gyroscope) ≤ 2mg (Accelerator)
 Bandwidth: ≥40Hz

Size: 38mm x 38mm x 36mm

 Wide Measurement Range Small Size, Low Weight High Reliability High Shock Survivability

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CS-IMU-06/06A Inertial Measurement Unit

Power supply:15- 30 VDC Current:≦160mA Range:±100°/s (Gyroscope) Bias: ≤0.015°/ s (Gyroscope) Non-linearity:<0.1 % F.S (Gyroscope) Resolution:<0.01°/ s (Gyroscope) Range:±5g (Accelerator) Non-linearity:<0.5 % F.S (Accelerator) **Resolution:1mg(Accelerator)** Bandwidth: ≥50Hz Output Signal:CS-IMU-06,RS232 CS-IMU-06A,0- 5V Temperature Range:-40-+85 C Size:42mm ×35mm ×48 mm High Bias stability **Full Temperature Range compensation** Non-linearity Calibration, Triaxial Crossed **Coupling Calibration, digital output CS-IMU-06A** Analog voltage output



CS-IMU-07

■ Measurement Range: ±250°/s (Gyroscope) ±15 g (Accelerator) Non-Linearity: ≤0.1%F.S (Gyroscope) \leq 2%F.S (Accelerator) Bias: ≤0.15°/s (Gyroscope) \leq 0.015 g (Accelerator) Bias Drift: 0.15%F.S (Gyroscope) 0.015 g (Accelerator) Bias Stability: ≤0.015°/s (Gyroscope) \leq 0.5mg (Accelerator) **Resolution:** $\leq 0.01^{\circ}$ /s (Gyroscope) \leq 0.5mg (Accelerator) Bandwidth: \geq 100Hz Size: 70mm x 60mm x 54mm High Precision and Bias Stability **RS422 Digital Output Calibration Temperature Range** Non-linearity Calibration, Triaxial Crossed **Coupling Calibration**

CS-IMU-08 Inertial Measurement Unit



 Power supply :15- 30 VDC Current: ≤70mA Bias: <0.15°/ s (Gyroscope) Bias :<0.15°/ s (Gyroscope)) Bias stability: ≤0.015°/ s (Gyroscope) Non-linearity: <0.1 % F.S(Gyroscope) Resolution: <0.03°/ s (Gyroscope) Bias: <10mg (Accelerator) Bias: <10mg (Accelerator) Non-linearity: <2 % F.S (Accelerator) Resolution: <1.7 mg (Accelerator) Output signal:RS422 Temperature range:-40- +70 ℃ Size:90mm ×87mm ×60mm
 Ultra-low temperature work High accuracy. high stability

High accuracy, high stability Digital RS422 output Full Temperature Range compensation Non-linearity Calibration, Triaxial Crossed Coupling Calibration



CS-IMU-09 Inertial Measurement Unit

- Power supply:+3.3 VDC Current: ≤23mA Angle measurement accuracy:<2° Acceleration measurement accuracy:5mg Non-linearity:<0.2 % F.S (Gyroscope) Non-linearity:<0.5 % F.S (Accelerator) Output signal: UART(TTL PWL)Output Working temperature:-40- +70 ℃ Size:59mm ×40mm ×17mm
- Measurement of the power line dancing Output of Three-axis angular velocity, three axises acceleration and Three - axis attitude Output of Dancing acceleration of three-dimensional space Dancing speed and dancing amplitude Full Temperature Range compensation Non-linearity Calibration, Triaxial Crossed Coupling Calibration UART(TTL PWL)output Low consumption, low volume, low weight



CS-IMU-10 Inertial Measurement Unit

■ Power supply:10- 30 VDC Current: ≤70mA Bias:±0.5°/s (Gyroscope) Bias Drift:±0.5°/s (Gyroscope) Non-linearity:0.5%F.S (Gyroscope) Resolution: ≤0.1°/s (Gyroscope) Bias:±10mg (Accelerator) Bias Drift: ±20mg (Accelerator) Non-linearity: ≤0.5% F.S (Accelerator) Resolution: ≤1 mg (Accelerator) Output Signal:CAN bus output Working temperature:-40- +70℃ Size:64 mm×45 mm×35mm

 Full - temperature range compensation Non-linearity Calibration, Triaxial Crossed Coupling Calibration Low Volume, Low Weight High shock resistance

CS-AHRS-01

Attitude and Heading Reference System ■ Measurement Range: ±180° (Heading Angle) ±90° (Pitch/Roll) Accuracy: ±0.5° (10s) ±5 °(100s) (Heading Angle) ±0.2 °(10s) ±2° (100s) (Pitch/Roll) **Bandwidth:** \geq 5Hz Size: 76mm x 76mm x 38mm High Precision and bias Stability **Calibration Temperature Range** Non-Linearity Calibration, Triaxial Crossed **Coupling Calibration RS232 Digital output** Short time Heading and Attitude System **High Reliability**

CS-AHRS-03

Without magnetometer

Low Power Consumption

Attitude and Heading Reference System



Measurement Range: 0- 360°

 (Heading Angle/Pitch/Roll)

 Accuracy: ≤1° (Heading Angle)

 ≤0.03°(Pitch/Roll)
 Size: 60mm x 32mm x 16mm

 Small Size, Low Weight

 RS485 Digital Output
 Mercantile Type

CS-AHRS-04

Attitude and Heading Reference System ■ Measurement Range: 0- 360° (Heading Angle) ±90° (Pitch) ±180° (Roll) Accuracy: ≤0.8° (10s) (Heading Angle) ≤0.5° (10s) (Pitch/Roll) Rolling Angle Range: ≤2.5° (Heading Angle/Pitch/Roll) Bandwidth: ≥ 50Hz Size: 45mm x 45mm x 30mm ■ Small Size, Low Weight RS422 Digital Output Industrial Grade

Low Power Consumption

CS-AHRS-02

Attitude and Heading Reference System

Measurement Range: 0- 360° (Heading Angle) ±90° (Pitch) ±180° (Roll) Accuracy: $\leq 0.7^{\circ}$ (RMS) (Heading Angle) $\leq 0.4^{\circ}$ (RMS) (Pitch/Roll) **Bandwidth:** ≥ 40Hz Size: 126.5mm x 31.3mm x 29mm High Precision and Bias Stability **Calibration Temperature Range** Non-Linearity Calibration, Triaxial Crossed **Coupling Calibration RS232 Digital output** Heading and Attitude System with High Accuracy **High Reliability** Kalman Filter Algorithm for Elimination



Patent No.ZL 201120377067.9 Patent Application No.201230081524.X Patent Application No.201220097950.7

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FUNCTION

 $\ensuremath{\mathbb O}\xspace$ Automatic warning through single or multiple SMS to family members' mobile phones

 $\ensuremath{\mathbb O}$ Voice prompt at site when falling down

©Manual press key to send single or multiple SMS in emergency situation

©SMS check for one's status

©Friendly reminder at the appointed time

- ©SMS reminder when battery runs low
- ©SMS reminder when switching on
- ©GPS and phone function (CS299)

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