ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Keyence EX-505* at our website: *Click HERE*

High Accuracy Inductive Gauging Sensors

EX-500 Series

Features

- Accurately measures all types of metal targets
- Linearity of ± 0.3% of F.S.
- Resolution of 0.03% of F.S.
- Digital adjustment circuit/Auto-zero function
- DIN-rail mountable

Measuring Distance

Non-shielded – 0 to 10 mm (0.39")

0 to 5 mm (0.20")

0 to 2 mm (0.08")

0 to 1 mm (0.04")



CE Refer to P.609 for a list of products complying with EMC directive.

For More Info & Data
www.keyence.com/askg

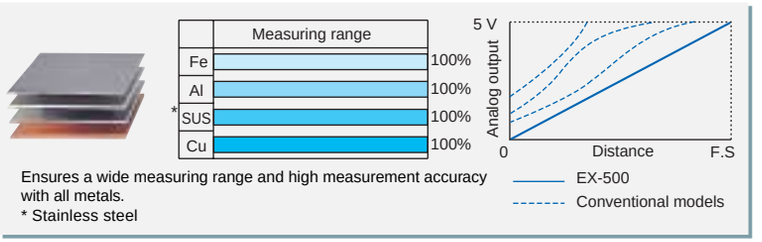
Description

High resolution and accuracy

The EX-500 Series measures target displacement with a resolution of 0.03% of F.S. The dual analog outputs can be connected to external equipment. Using the built-in linearizer circuit, the EX-500 Series accurately outputs absolute displacement values with a linearity of ±0.3% of F.S.

Wide measuring range for nonferrous targets

The EX-500 Series provides a wide measuring range and high measurement accuracy for nonferrous targets, unlike the more limited conventional sensors.



Ensures a wide measuring range and high measurement accuracy with all metals.
* Stainless steel

Auto-zero function

Pressing the auto-zero key sets the current measured value to 0 V. Zero-point adjustment with a standard target is as simple as pressing the auto-zero key, making sensor setup at product changeover quick and easy. (External control terminal is provided.)

Interference suppression function

The interference suppression function allows side-by-side installation of up to 5 sensors, enabling multi-point measurements in limited spaces.



Compatible sensor heads

Sensor heads of the same type can replace each other with only minor adjustments. The sensor cable can easily be extended by adding the optional extension cable and changing the switch settings.



Safety functions

If the sensor head is damaged or the cable is disconnected, the ALARM LED indicator lights and an alarm signal is output.



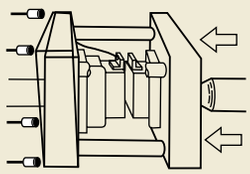
Heat-resistant sensor heads (105°C (221°F)) conform to IP-67

The EX-500 Series offers four types of sensor heads including high-accuracy and long-range models. These sensor heads are ideal for measurements in harsh environments.

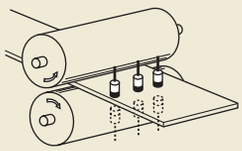


Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

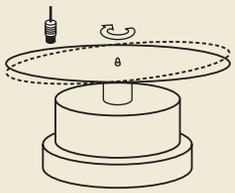
Applications



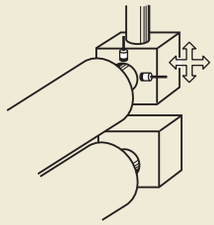
Control for press machines



Thickness and warpage measurement



Runout and eccentricity measurement



Centering control

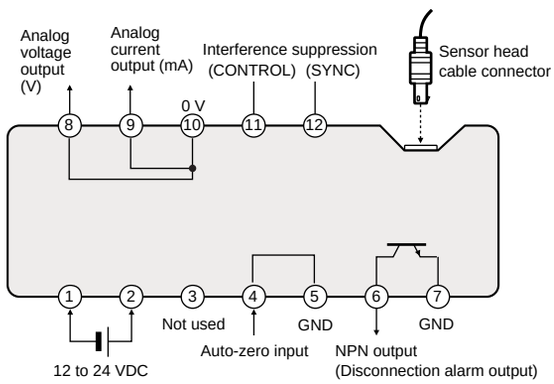
Specifications

Type	Size	M8	M8	M16	M22
Model	Sensor head	EX-008	EX-008	EX-016	EX-022
	Controller	EX-501	EX-502	EX-505	EX-510
Measuring range		0 to 1 mm 0.04"	0 to 2 mm 0.08"	0 to 5 mm 0.20"	0 to 10 mm 0.39"
Analog output	Output voltage	0 to 5 V (Output impedance: 100 Ω)			
	Output current	4 to 20 mA (Applicable load: 0 to 350 Ω)			
	Resolution	0.03% of F.S. (RESPONSE = 3, 4)			
	Linearity	±0.3% of F.S. (RESPONSE = 2, 3, 4)			
	Response time (Response mode)	0.1 ms (RESPONSE = 1), 1 ms (RESPONSE = 2), 10 ms (RESPONSE = 3), 100 ms (RESPONSE = 4)			
Disconnection alarm output[1.] (N.C.)		NPN: 100 mA max. (40 V), Residual voltage: 1 V max.			
Functions		Auto-zero function / Auto-span function, Response time selector function / Preset metal characteristic memory function, Cable length selector function / Interference suppression function			
Temperature fluctuation	Sensor head	0.03% of F.S./°C			
	Controller	0.04% of F.S./°C[2.]			
Power supply voltage		12 to 24 VDC ±10%			
Current consumption		220 mA max.			
Enclosure rating		Sensor head: IP-67			
Ambient temperature	Sensor head	-20 to +105°C (-4 to 221°F), No freezing			
	Controller	0 to +50°C (32 to 122°F), No freezing			
Relative humidity		35 to 85%, No condensation			
Weight	Sensor head	Approx. 50 g		Approx. 63 g	Approx. 80 g
	Controller	Approx. 360 g			

The above data was obtained using an aluminum target (A5052 t=1 mm 0.04"). When measuring steel or stainless steel targets, refer to the characteristics of linearity for these materials.

1. NPN output can easily be converted to PNP output by connecting the optional OP-5148 PNP Output Converter.
2. When the distance between the sensor head and the target is 50% of the measuring range and the operating temperature is 10 to +40°C (32 to 104°F) (EX-008) or 0 to +50°C (32 to 122°F) (EX-016 and EX-022).

Connections



4 Auto-zero input terminal:
Sets the analog voltage to 0 V when this terminal and GND terminal 5 are short-circuited. (When current output is used, the output current is set to 4 mA.)

6 NPN output (Disconnection alarm output) terminal:
Outputs a signal when the sensor head cable is disconnected.

8 Analog voltage output terminal:
Analog voltage of 0 to 5 V relative to full measuring range is output.

9 Analog current output terminal:
Analog current of 4 to 20 mA relative to full measuring range is output.

11 & 12 Interference suppression terminals:
Terminals 1, 5, and 7 are internally connected.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Part Names and Functions



1. Sensor head cable connector

2. LED Indicators

POWER: Power indicator
OVER: Out-of-r ange indicator
ALARM: Disconnection alar m indicator

3. Response time selector switch

You can select one of the f ollo wing f our response times;

RESPONSE	1	2	3	4
Response time	0.1 ms	1 ms	10 ms	100 ms

4. Mode selector switch

This switch is used to select the desired mode based on the target material.

MODE		Function	Reference metals	Other metals
1	MEASUREMENT mode	When measuring targets, set the switch to this position.	–	
2	ADJUSTMENT mode for aluminum	When adjusting output voltage (current), select the ADJUSTMENT mode based on the target material.	Aluminum (A5052)	Copper (C1100) Brass (C3560)
3	ADJUSTMENT mode for stainless steel		Stainless steel (SUS304)	–
4	ADJUSTMENT mode for steel		Iron (S45C)	Iron (SS41) Stainless steel (SUS410)

5. Cable length selector switch

Nor mally set this switch to “3 m 9.8' ” (the lo wer posi- tion).

6. Lock switch

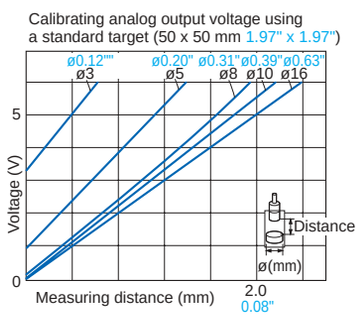
When this switch is set to LOCK (the lower position), any output adjustment keys (7) are disabled.

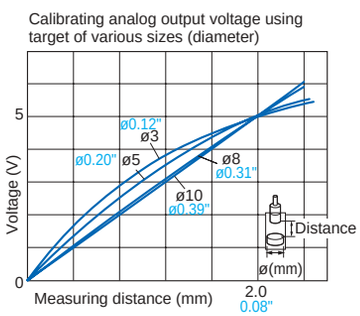
7. Output adjustment keys

Functions are adjusted with the Mode selector switch.

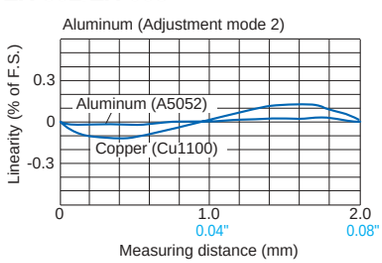
Characteristics

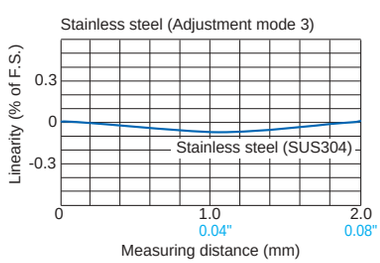
Output voltage for measuring targets of various sizes (Typical)
EX-502/EX-008 (Target: Aluminum A5052)

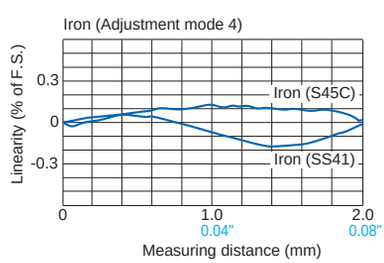




Linearity for various metal measurements (Typical)
EX-502/EX-008





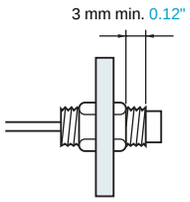


Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Hints on Correct Use

Sensor head installation

Secure the nut away from the tip of the metal case as shown on the right.



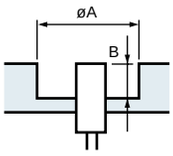
Tightening torque

When tightening the nut, do not exceed the maximum tightening torque specified below.

EX-008	EX-016	EX-022
10 N•m max.	20 N•m max.	30 N•m max.

Flush-mounting the sensor head

To flush-mount the sensor head in a metal base, follow the guidelines given in the table below.



Distance / Model	øA (mm)	B (mm)
EX-008	20 0.79"	11 0.43"
EX-016	45 1.77"	20 0.79"
EX-022	60 2.36"	25 0.98"

Cable extension

The standard sensor head cable length is 3 m 9.8'. It can be extended to 10 m 32.8' by connecting an optional 7-m 23.0' extension cable (Model: OP-20708).

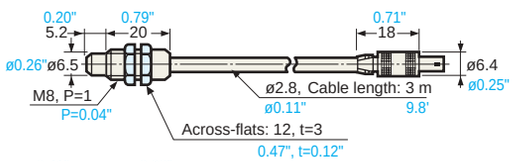
Dimensions

▶For CAD Data Download >>> http://www.keyence.com/cadg

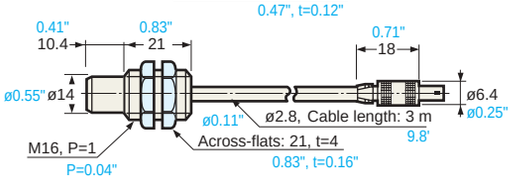
Unit: mm Inch

Sensor heads

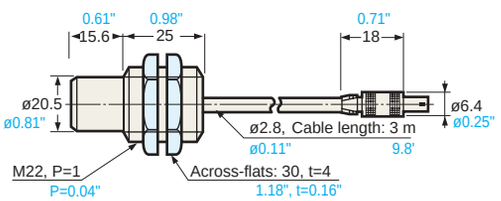
EX-008



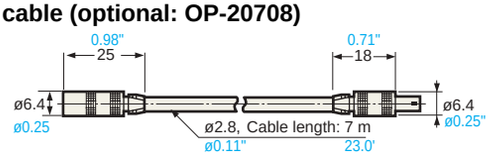
EX-016



EX-022

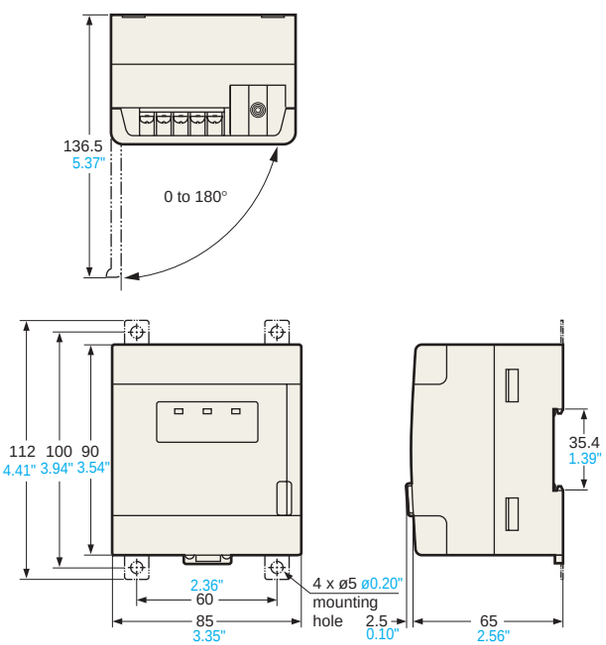


Extension cable (optional: OP-20708)



Controller

EX-501/502/505/510



Options

RD Series Analog Sensor Controller



The RD Series processes analog input signals from sensors. It can easily perform various arithmetic operations such as tolerance limit differentiation and peak-to-peak hold.
For details on the RD Series, see the RD Series descriptions.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP