

Linear Gages

LG100 SERIES 542 — Environment-Resistant type

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- High-accuracy gage head suitable for in-line and in-laboratory use.
- Assures the expected repeatability (2σ) in the full measurement range and the narrow-range precision.
- Protection grade IP67G with sliding durability of 50 million times and more*1 and adoption of highly oil-resistant materials.
- All models have the origin point signal output function to restore the origin point position after recovery from problems such as overspeed.
- It can be connected to a compact counter (EJ counter) suitable for in-line use or building into a device or a multifunctional counter (EH counter)*2 suitable for use in measurement rooms.

*1 10 mm range models (Actual value from in-house tests)

*2 A conversion plug is required.

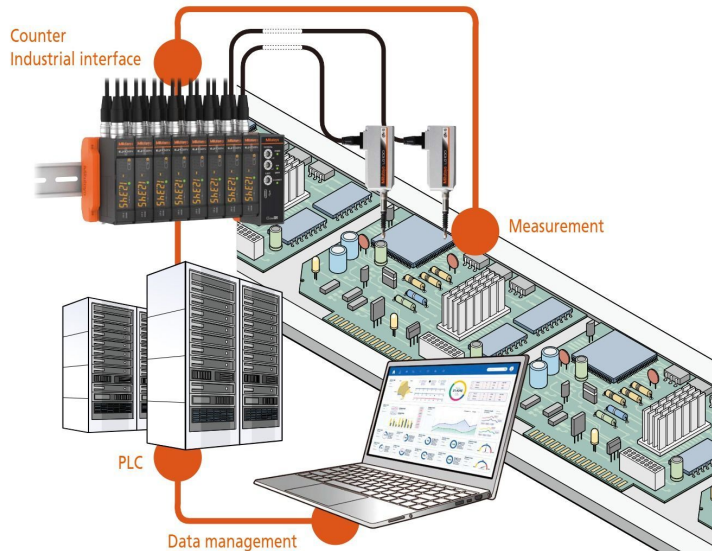
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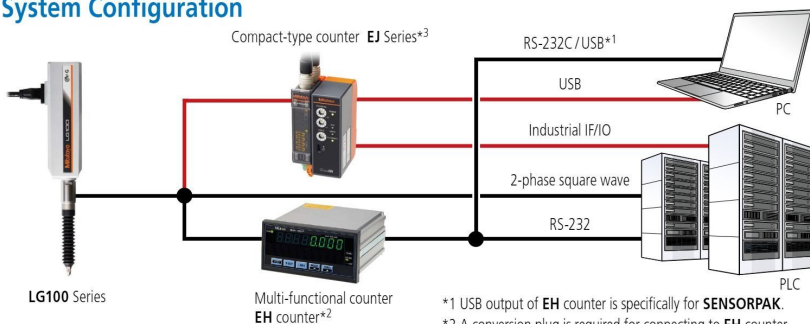
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Enables real-time measurement and data management



System Configuration



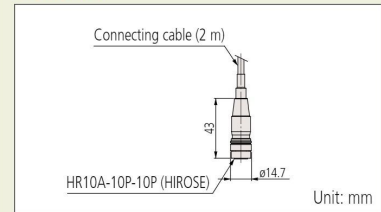
LG100 Series

Multi-functional counter
EH counter*2

- *1 USB output of EH counter is specifically for SENSORPAK.
- *2 A conversion plug is required for connecting to EH counter.
- *3 Conventional gages can be connected using conversion connectors. (Please contact us for details of connectable gages.)

IP67 G

Connector



Optional Accessories

- Air lifter
 - For 10 mm range models: **02ADE230**
 - For 25 mm range models: **02ADE250**
 - For 50 mm range models: **02ADE270**
- Note 1: Required air pressure: 0.2 to 0.4 MPa (With a 0.1 μ m resolution type: 0.2 MPa)
Note 2: Spindle extends when air is supplied.



- Rubber boot (spare)
 - For 10 mm range models: **21HAA331**
 - For 25 mm range models: **21HZA176**
 - For 50 mm range models: **21HZA184**
- Note 3: Dimensions are shown in the external dimensions drawing of the product.

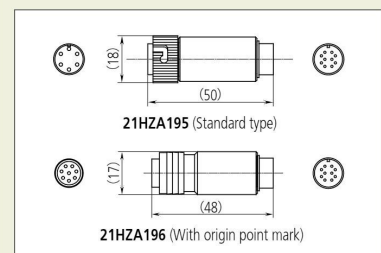
- Thrust stem set:
 - For 10 mm range models: **02ADB680** (Thrust stem: **02ADB681**, Clamp nut: **02ADB682**)
 - For 25/50 mm range models: **02ADN370** (Thrust stem: **02ADN371**, Clamp nut: **02ADB692**)

This is a combination of thrust stem and a clamp nut.
- Spanner wrench:
 - For 10 mm range models: **02ADB683**
 - For 25/50 mm range models: **02ADB693**

If required spanner wrench is required for tightening. If using multiple gages, a thrust stem set is required for each gage and one spanner wrench.
- Extension cable
 - 5 m: **21HZA197**
 - 10 m: **21HZA198**
 - 20 m: **21HZA199**

Note 4: Connectable up to 3 pieces, 20 m at maximum.

- Conversion plug
 - Connection to EH-101P/102P: **21HZA195**
 - Connection to EH-102Z: **21HZA196**



Mitutoyo

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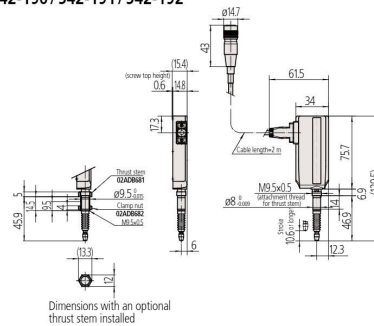
SPECIFICATIONS

Order No.	542-190	542-191	542-192	542-193	542-194	542-195	542-196	542-197
Measuring range	10 mm			25 mm			50 mm	
Resolution	1 μm	0.5 μm	0.1 μm	1 μm	0.5 μm	0.1 μm	1 μm	0.5 μm
Measuring accuracy (20 °C) L=arbitrary measuring length (mm)	1.5 + L/50 μm		0.8 + L/50 μm	1.5 + L/50 μm		0.8 + L/50 μm	1.5 + L/50 μm	
Small range accuracy (20 °C)	0.5 μm (Arbitrary 20 μm range)							
Repeatability: 2σ (20 °C)	0.3 μm							
Reference mark repeatability: σ (20 °C)	σ ≤ 0.5 μm (at a constant reference point passing speed less than 300 mm/s in the same direction)							
Measuring force	Contact point downwards			Contact point horizontal			Contact point upwards	
	1.4 N or less			1.3 N or less			1.2 N or less	
	4.6 N or less			4.3 N or less			4.9 N or less	
Position detection method	Optical transmission-type Linear encoder							
Maximum response speed	1,500 mm/s		400 mm/s	1,500 mm/s		400 mm/s	1,500 mm/s	
Output signal	90° phase difference, differential square wave (RS-422A equivalent)							
Minimum edge intervals	500 ns (2 MHz)	250 ns (4 MHz)		500 ns (2 MHz)	250 ns (4 MHz)		500 ns (2 MHz)	250 ns (4 MHz)
Output signal pitch	4 μm	2 μm	0.4 μm	4 μm	2 μm	0.4 μm	4 μm	2 μm
Reference mark position (Phase-Z)	Approx. 3 mm from contact point tip (lowest rest point)				Approx. 5 mm from contact point tip (lowest rest point)			
Mass	Approx. 260 g			Approx. 300 g			Approx. 400 g	
Contact point	ø3 mm carbide tipped (fixing screw: M2.5 (P=0.45) x5), standard contact point: 901312							
Stem	ø8 mm			ø15 mm				
Bearing	Linear ball type							
Output cable length	2 m (directly from casing)							
Connector	Plug: HR10A-10P-10P (HIROSE), Compatible receptacle: HR10A-10R-10S (HIROSE), Compatible connector: HR10A-10J-10S (HIROSE)							
Operating temperature (humidity) ranges	0 to 50 °C (RH 20 to 80%, non-condensing)							
Storage temperature (humidity) ranges	-10 to 60 °C (RH 20 to 80%, non-condensing)							
Standard accessories	Wrench for contact point: 538610				Wrench for contact point: 210187			

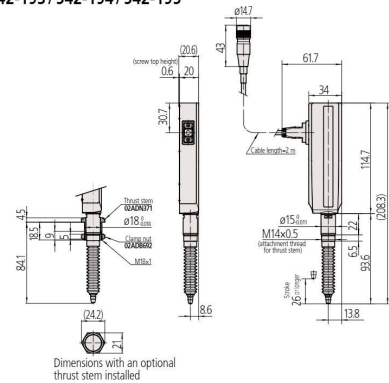
DIMENSIONS

Unit: mm

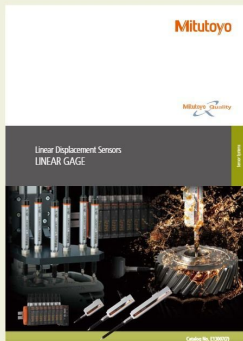
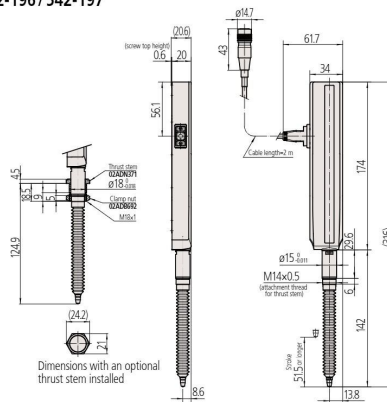
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Refer to the Linear Gage Brochure (E13007) for more details.