

Linear Gages

LG100 SERIES 542 — Environment-Resistant type

- 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.
 - *1 10 mm range models (Actual value from in-house tests)
- 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.
 - *2 A conversion plug is required.

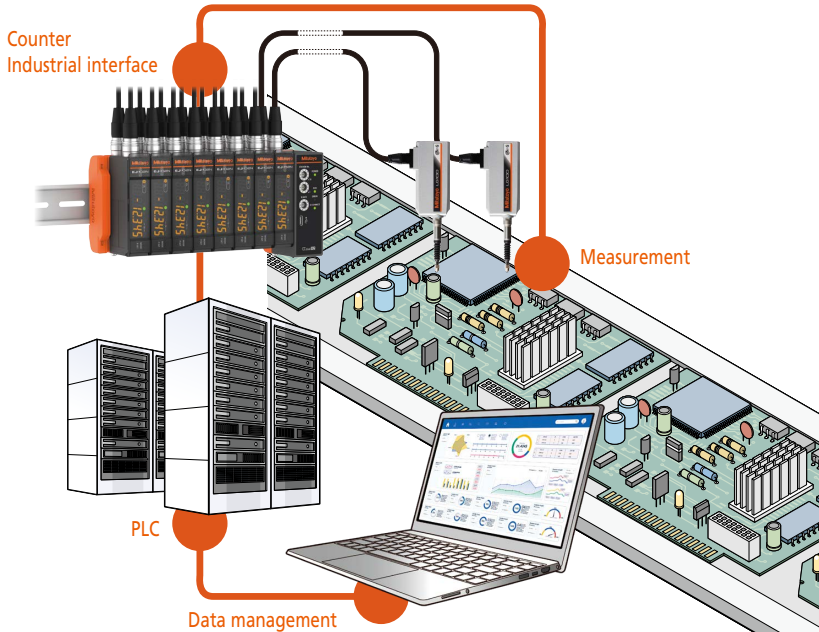
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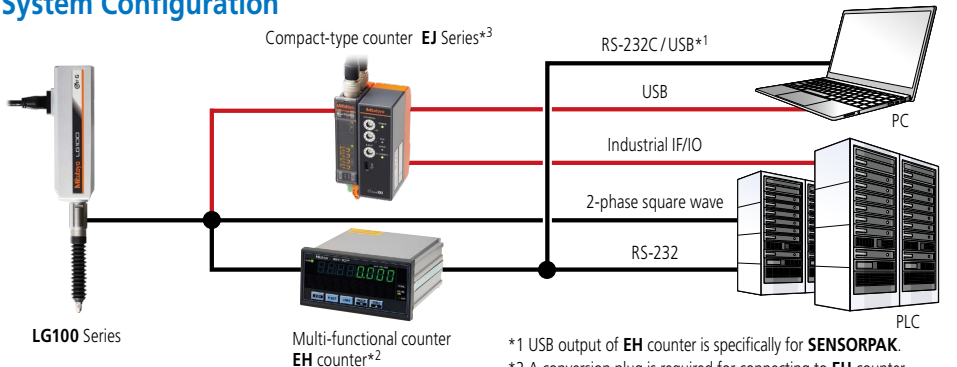
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Enables real-time measurement and data management



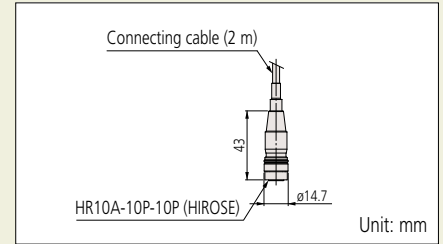
System Configuration



*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.)



Connector

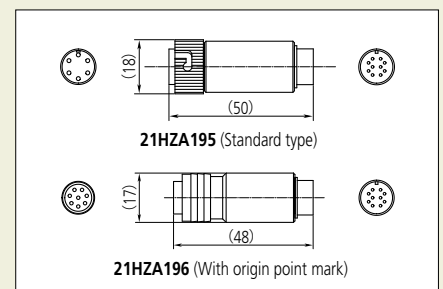


Optional Accessories

- 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**



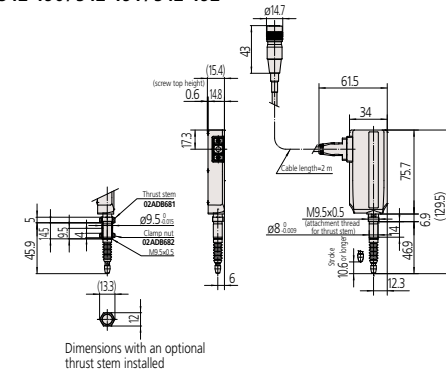
SPECIFICATIONS

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)	$\sigma \leq 0.5 \mu\text{m}$ (at a constant reference point passing speed less than 300 mm/s in the same direction)								
Measuring force	Contact point downwards		1.4 N or less			4.6 N or less		5.7 N or less	
	Contact point horizontal		1.3 N or less			4.3 N or less		5.3 N or less	
	Contact point upwards		1.2 N or less			4.0 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		
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)		
Output signal pitch	4 μm		2 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	$\varnothing 3$ mm carbide tipped (fixing screw: M2.5 (P=0.45) x5), standard contact point: 901312								
Stem	$\varnothing 8$ mm				$\varnothing 15$ 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				

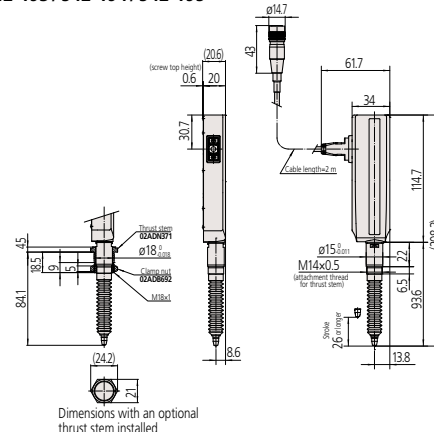
DIMENSIONS

Unit: mm

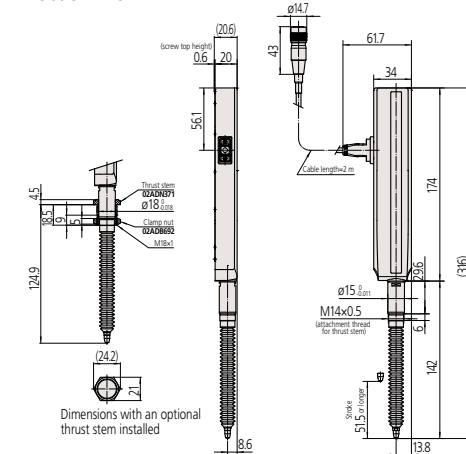
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Refer to the Linear Gage Brochure (E13007) for more details.