

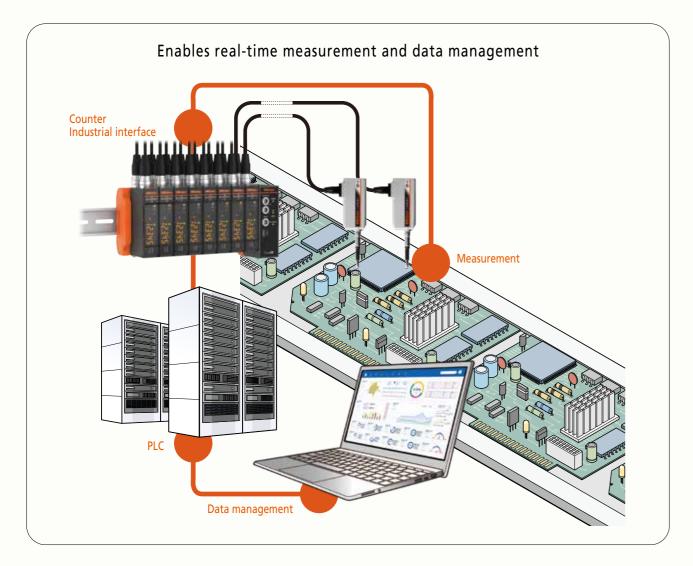


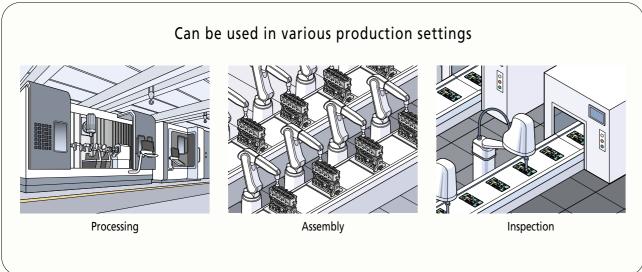
Environment-Resistant Digital Gage LINEAR GAGE LG100 Series Compact-type Counter EJ Counter



Can be used inline or in measurement rooms

Best-in-class precision and environmental resistance.





Linear Gage LG100 Series



Industrial interface-mounted compact counter EJ Series



High accuracy

Precision and accuracy demanded by the automated assembly and inspection markets, are guaranteed. Thanks to our expertise as a manufacturer of measuring instruments, repeatability in the full measurement range (2 σ) and narrow-range precision are also guaranteed.

Environment resistance

Sliding durability of more than 50 million times*, with protection level of IP67G. Highly oil-resistant material is used in the rubber cap and cable sheath, so it can be used even in harsh environments.

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

Function of reference point detection

Reference point signal output functions are featured throughout this series. When incorporating into a device the master setting value is easy to set and is retained after shutdown. Re-setting the origin is possible when there are problems such as excessive speed, ensuring excellent reliability.

Can be connected with 2 types of counter

The ideal counter can be selected according to the application it can be connected to a compact counter (EJ counter) suitable for inline use or building into a device or a multifunctional counter (EH counter)* suitable for use in measurement rooms.

* A conversion plug is required for connecting to multifunctional counter (EH counter).

Combining small form and ease of use

High-speed and space-saving, delivering production site visualization, improved productivity, and information feedback. Up to 8 compact counters (EJ counters) can be linked providing the capacity to connect up to 16 gages. On a DIN rail, each unit can be connected directly without using cables, so it takes up minimal space. All linked units and gages can be driven by a single power source.

CC-Link connection, USB connection

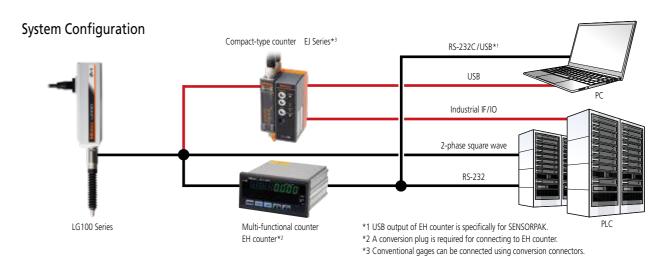
Data can be output through an industrial interface (CC-Link) by linking a compact counter (EJ counter) with an interface unit. Constant data monitoring and positional management are performed. A USB interface is also provided for easy connection with a computer.

Note: The range of interfaces is set to be expanded in the near future.

Inter-axial calculation function

(Please contact us for details of connectable gages.)

Enables sum difference operations between 2 gages connected to the same counter. Functions such as tolerance judgment and peak hold are also included.



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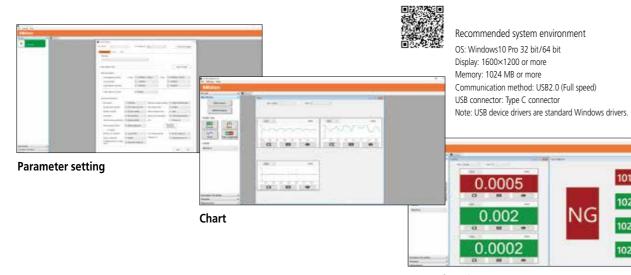
SOFTWARE

LG QuickSetupTool

A configuration tool is available for use with the EJ counter when connected via the optional USB interface. All kinds of settings normally carried out with counter operating keys can now be easily applied from a computer.

Measurement value display and operation results can also be viewed on a PC.

Note: This software can be used free of charge and downloaded from the Mitutoyo website. https://www.mitutoyo.co.jp/eng/contact/products/lg/



General settings

OPTIONS

Pneumatic lifter



For 10 mm range models: 02ADE230 For 25 mm range models: **02ADE250** For 50 mm range models: **02ADE270**

Rubber boot (spare)



For 10 mm range models: 21HAA331 For 25 mm range models: 21HZA176 For 50 mm range models: 21HZA184

Thrust stem set/Spanner wrench



1021

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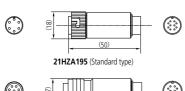
• Thrust stem set (Thrust stem, Clamp nut) For 10 mm range models: **02ADB680** For 25/50 mm range models: **02ADN370** • Spanner wrench
For 10 mm range models: **02ADB683** For 25/50 mm range models: **02ADB693**

Extension cable



Extension cable 5 m: 21HZA197 Extension cable 10 m: 21HZA198 Extension cable 20 m: 21HZA199 Total length (gage to counter) must not exceed 20 m.

Conversion plug for connecting to EB/EG/EH/EV Counter



21HZA196 (With origin point mark)

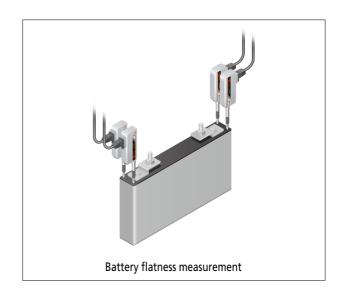
Equipped with the EH Counter

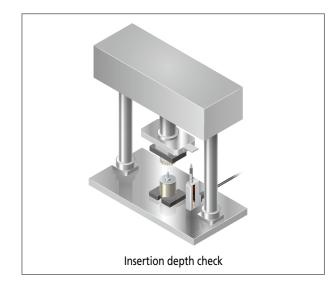


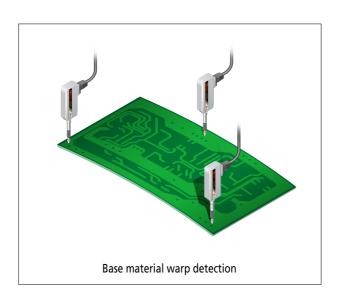
Standard type (for P counter): 21HZA195 With origin point mark (for Z counter): 21HZA196

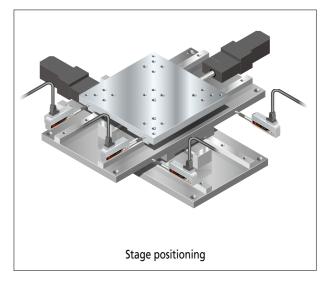
For details of other options, please check the Linear Gage Brochure No. E13007.

APPLICATION

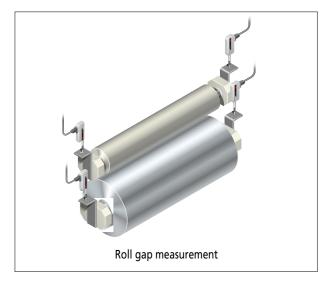












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LG100 Series

SPECIFICATIONS

Order No.		542-190	542-191	542-192	
Measuring range			10 mm		
Resolution		1 μm	0.5 µm	0.1 µm	
Measuring accuracy (20 °C) L=arbitrary measuring length (mm)		1.5 + L/50 μm 0.8 + L/50 μ		0.8 + L/50 μm	
Small rang	e accuracy	0.5 µn	0.5 μm (Arbitrary 20 μm range)		
Repeatabil	ity: 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	1.4 N or less			
	Contact point horizontal	1.3 N or less			
	Contact point upwards	1.2 N or less			
Maximum response speed		1,500	mm/s	400 mm/s	
Minimum edge intervals		500 ns (2 MHz)	250 ns	(4 MHz)	
Output signal pitch		4 μm	2 μm	0.4 µm	
Reference mark position (Phase-Z)		Approx. 3 mm fror	m contact point tip	(lowest rest point)	
Stem		ø8 mm			
Mass		Approx. 260 g			
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	

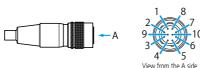
SPECIFICATIONS

SPECIFICA	TIONS		
Order No.		542-196	542-197
Measuring range		50 mm	
Resolution		1 μm	0.5 μm
Measuring accuracy (20 °C) L=arbitrary measuring length (mm)		1.5 + L/50 μm	
Small rang	e accuracy	0.5 µm (Arbitra	ry 20 µm range)
Repeatabil	ity: 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)	
	Contact point downwards	5.7 N or less	
Measuring	Contact point horizontal	5.3 N or less	
force	Contact point upwards	4.9 N or less	
Maximum response speed		1,500 mm/s	
Minimum edge intervals		500 ns (2 MHz)	250 ns (4 MHz)
Output signal pitch		4 μm	2 μm
Reference mark position (Phase-Z)		Approx. 5 mm from contact	point tip (lowest rest point)
Stem		ø15 mm	
Mass		Approx. 400 g	
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: 210187	

SPECIFICATIONS

SI ECITICATIONS				
Order No.		542-193	542-194	542-195
Measuring range		25 mm		
Resolution		1 μm	0.5 µm	0.1 µm
Measuring accuracy (20 °C) L=arbitrary measuring length (mm)		1.5 + L/50 μm 0.8 + L/50 μr		0.8 + L/50 μm
Small rang	e accuracy	0.5 μm (Arbitrary 20 μm range)		
Repeatabil	ity: 2 σ (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)		
Manaurina	Contact point downwards	4.6 N or less		
Measuring force	Contact point horizontal	4.3 N or less		
	Contact point upwards	4.0 N or less		
Maximum response speed		1,500	1,500 mm/s 400 mm/s	
Minimum edge intervals		500 ns (2 MHz)	250 ns	(4 MHz)
Output signal pitch		4 μm	2 μm	0.4 µm
Reference mark position (Phase-Z)		Approx. 5 mm from contact point tip (lowest rest point)		
Stem		ø15 mm		
Mass		Approx. 300 g		
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: 210187		

Pin assignment



Pin No.	Signal	Pin No.	Signal
1	PA	7	N.C
2	PA	8	PZ
3	N.C	9	+5V
4	PB	10	GND
5	PB	Shell	FG
6	N.C		

- Power supply to a Linear gage Power supply voltage: DC5 V (4.8 V to 5.2 V), Ripple voltage: 0.2 Vpp or less, Maximum current consumption: 80 mA
- Suitable receptacle and jack Receptacle: HR10A-10R-10S (HIROSE) Jack: HR10A-10J-10S (HIROSE)

EJ-102N/Interface unit CC-Link/Interface unit USB

SPECIFICATIONS

Order No.		542-080	542-081
Unit		mm	inch/mm
Resolution		0.005, 0.001, 0.0005, 0.0001 (mm)	0.0002, 0.00005, 0.00002, 0.000005 (inch)/ 0.005, 0.001, 0.0005, 0.0001 (mm)
Number of linear gage connection ports		:	2
Supported gage	e signal	Differential square wave, differential square wave with reference point mark	
Maximum inpu	t frequency		ИНz
User Interface	Display	Negative sign + 8 (1 gage value displayed	digits and indicator d, manually switchable)
	Number of I/O ports		eak clear, data hold, preset) GO, Tolerance judgment)
External I/O	Compatible communication standards	CC-Link, USB (Supported with optional interface units)	
Max. number of linked units		EJ Counter 8 units + 1 (optional) interface unit (Max. number of linear gage connections: 16)	
	Input voltage	10 V to 27 V DC	
Power supply	Power consumption	Max. number of I	(Includes 2 linear gages) inks: 30 W or less linear gages included)
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)	
Mass			т. 120 g
CE Marking		EMC Directive: EN 61326-1 Immunity test requirement: Clause 6.2 Table 2 Emission limit: Class A RoHS Directive: EN IEC 63000	

Connectable linear gage series	Conversion cable (optional)
LG100	Not necessary
LGF-Z	Necessary (21HZA194)
LGF/LGK/LGB/LG	Necessary (21HZA193)

SPECIFICATIONS

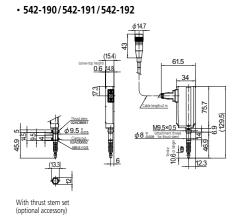
Order No.		21HZA186	
Model No.		Interface unit CC-Link	
		USB 2.0 Full Speed	
Applicable inter	rface	CC-Link Ver. 1.10	
		CC-Link Ver. 2.00	
	Display	POWER (green), RUN (green), ERROR (red),	
Harris I. Lander	-17	EJ-CONNECT (green)	
User Interface	6 11 1	Rotary switch×3	
	Switch	(Exchange number settings×2,	
		communication speed settings×1)	
		Common protocols for USB and CC-Link, Readout of	
		current value*1, Current value hold (software hold),	
Functions		Parameter setting on EJ counter, Tolerance judgment	
FUNCTIONS		value settings, Preset value settings, preset/zero-set	
		clear, peak clear, error clear	
		*1 Only Ver. 2.00 is supported with CC-Link.	
Power supply		Power is supplied from 542-080/542-081	
		(Cannot be charged via USB)	
Operating temperature (humidity)		0 to 50 °C (RH 20 to 80%, non-condensing)	
Storage temperature (humiditu)			
Storage temperature (humidity) ranges		-10 to 60 °C (RH 20 to 80%, non-condensing)	
CE Marking		EMC Directive: EN 61326-1	
		Immunity test requirement: Clause 6.2 Table 2	
		Emission limit: Class A	
		RoHS Directive: EN IEC 63000	

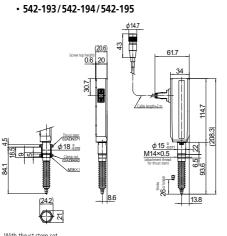
SPECIFICATIONS

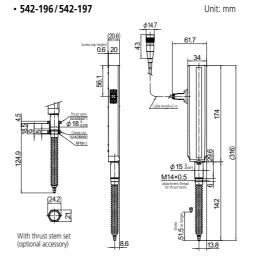
Order No.	21HZA149	
Model No.	Interface unit USB	
Applicable interface	USB 2.0 Full Speed	
User Interface	POWER (green)	
Functions	Readout of current value, Current value hold (software hold), Parameter setting on EJ counter, Tolerance judgment value settings, Preset value settings, preset/ zero-set clear, peak clear, error clear	
Power supply	Power is supplied from 542-080/542-081 (Cannot be charged via USB)	
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)	
CE Marking	EMC Directive: EN 61326-1 Immunity test requirement: Clause 6.2 Table 2 Emission limit: Class A RoHS Directive: EN IEC 63000	

• Interface unit USB

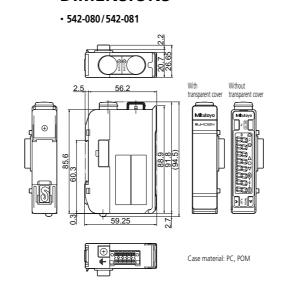
DIMENSIONS

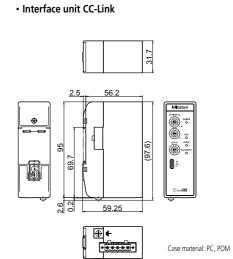


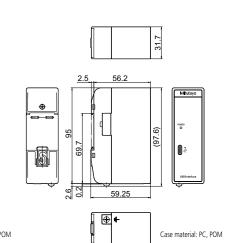




DIMENSIONS







Unit: mm

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Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.



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https://www.mitutoyo.co.jp/global.html

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