Communication type

Item	Type	Communica		
	Model No.	HL-G203B-S-MK	HL-G205B-S-MK	HL-G208E
Applicable regulations and certifications		CE Marking (EMC Directive, RoHS Directive), UK(Regulations), FDA Regulation, TÜV SÜD Certifica		
Measurement center distance		30 mm 1.181 in	50 mm 1.969 in	85 mm 3.1
Measurement range		±5 mm ±0.197 in	±10 mm ±0.394 in	±20 mm ± in
Beam diameter (Note 2)(Note 3)		X-axis: 40 µm 1.575 mil approx. Y-axis: 1,000 µm 39.370 mil approx.	X-axis: 60 µm 2.362 mil approx. Y-axis: 2,000 µm 78.740 mil approx.	X-axis: 90 3.543 mil approx. Y-axis: 3,0 µm 118.1 approx.
Resolution		0.5 µm 0.020 mil	1.5 µm 0.059 mil	2.5 µm 0.(mil
Linearity	Limited range	±0.05%F.S. (27.5 mm to 32.5 mm) (1.083 in to 1.280 in)	±0.05%F.S. (45 mm to 55 mm) (1.772 in to 2.165 in)	±0.05%F.S (75 mm to mm) (2.953 in t 3.740 in)
	Other than above	±0.075%F.S.	±0.075%F.S.	±0.075%F.
Temperature characteristics		0.03 %F.S./°C		
Measuring method		Diffuse reflection		
Light source		Red semiconductor laser: Class 2 [IEC / EN / JIS / Maximum output: 1 mW, Peak emission wavele		

Item	Type	Communica		
	Model No.	HL-G203B-S-MK	HL-G205B-S-MK	HL-G208B
Light receiving element		CMOS image sensor		
Power supply voltage		Power supply units with a current capacity of 50 ripple 0.5 V (P-P)		
Current consumption		150 mA or less (Note 5)		
Sampling cycle		100 µs, 200 µs, 500 µs, 1 ms, 2 ms		
Communication interface	**Ethernet**	Only Auto Negotiation 10 M / 100 Mbps (Half Du Communication may be unstable if connected t Negotiation. • IEEE802.3u, 10BASE-T / 100BASE-TX RJ45 • Supported protocol: EtherNet/IP, Modbus TCP,		
	RS-485	• Communication speed: 9,600 / 19,200 / 38,400 • Supported protocol: Modbus RTU • Maximum number of connected units: 16		
External input	**IN 1**	• Trigger input •The input conditions are interlocked with NPN <When NPN output is selected> • Source current: 1.5 mA approx. • Input conditions Invalid: 3 to 26.4 V DC or when released Valid: 0 to 1.5 V DC <When PNP output is selected> • Sink current: 2.5 mA approx. • Input conditions Invalid: 0 to 11 V DC or when released Valid: 19 to 26.4 V DC		
Indicators	**Laser radiation**	Green LED (Lit while laser beams are being emit		
	Alarm	Orange LED (Lit when measurement is not poss light intensity, or due to excessive extraneous li		

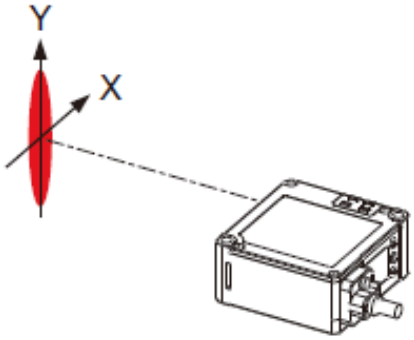
Item		Type	Communica		
		Model No.	HL-G203B-S-MK	HL-G205B-S-MK	HL-G208B
Display section			0.9 inch organic EL Measured value: signed 5-digit (maximum of 4		
Pollution degree			2		
Operating altitude(Note 6)			2,000 m 6561.680 ft or less		
Grounding method			Capacitor grounding		
Environmental resistance	Protection		IP67 (IEC)		
	Ambient temperature		-10 to +45 °C -14 to 113 °F (No icing allowed), St allowed)		
	Ambient humidity		35 to 85 % RH (No condensation allowed), Stora allowed)		
	Ambient illuminance		Incandescent light: 3,000 ℓx or less at the light-		
	Insulation resistance		20 MΩ or higher, using 500 V DC megger		
	Withstand voltage		1,000 V AC between all terminals and case for 1		
	Vibration resistance		10 to 55 Hz (period: 1 min.) frequency, 1.5 mm C directions for two hours each		
	Shock resistance		500 m/s^2 acceleration (50 G approx.) in X, Y and		
Material			Product casing: Aluminum die casting, Front co		
Weight			Net weight: 150 g approx., Gross weight: 200 g		

Notes :

1) Unless otherwise specified, the above specifications are typical values measured under the following measurement conditions. They do not guarantee performance for all target objects.

Power supply voltage: 24 V DC, ambient temperature: 20 °C 68 °F, sampling cycle: 1 ms, average count: 512 times, measurement center distance, target object: visible light shielding ceramic

2) The X and Y axes of the beam diameter are specified as shown in the figure follow.



3) The beam diameter is defined as $1/e^2$ (approx. 13.5 %) of the center light intensity. Due to leak light outside the defined range, the measurement values may be affected if the reflectance around the detecting point is higher than that of the detecting point.

4) This product complies with the FDA regulations (FDA 21 CFR 1040.10 and 1040.11) in accordance with FDA Laser Notice No. 56, except for complying with IEC 60825-1 Ed. 3.

5) Current consumption of the sensor only. External input current is not included.

6) Do not use or store this product in environments where ambient air is pressurized to an air pressure higher than the atmospheric pressure at an altitude of 0 m.

7) The server functionality of SLMP supports both 3E and 4E frames; however, the client functionality only supports 4E frames.

* Ethernet is a registered trademark of FUJIFILM Business Innovation Corp.

* EtherNet/IP is a trademark or a registered trademark of Open DeviceNet Vendors Association (ODVA).

* Modbus is a registered trademark of Schneider Electric USA Inc.

* SLMP is a registered trademark of Mitsubishi Electric Corporation.

Analog output type

Item	Type	Analog output type		
	Model No.	**HL-G203B-A-MK**	**HL-G205B-A-MK**	**HL-G208-A-MK**

Applicable regulations and certifications		CE Marking (EMC Directive, RoHS Directive), UKC/ RoHS Regulations), FDA Regulation, TÜV SÜD Cer Korea KC Mark		
Measurement center distance		30 mm 1.181 in	50 mm 1.969 in	85 mm 3.346 in
Measurement range		±5 mm ±0.197 in	±10 mm ±0.394 in	±20 mm ±0.787 ir
Beam Diameter (Note 2)(Note 3)		X-axis: 40 µm 1.575 mil approx. Y-axis: 1,000 µm 39.370 mil approx.	X-axis: 60 µm 2.362 mil approx. Y-axis: 2,000 µm 78.740 mil approx.	X-axis: 9(µm 3.543 mil appr Y-axis: 3,000 µm 118.110 approx.
Resolution		0.5µm 0.020 mil	1.5µm 0.059 mil	2.5µm 0.098 mi
Linearity	**Limited range**	±0.05%F.S. (27.5 mm to 32.5 mm) (1.083 in to 1.280 in)	±0.05%F.S. (45 mm to 55 mm) (1.772 in to 2.165 in)	±0.05%F. (75 mm t 95 mm) (2.953 in 3.740 in)
	Other than above	±0.075%F.S.	±0.075%F.S.	±0.075%
Temperature characteristics		0.03 %F.S./°C		
Measuring method		Diffuse reflection		
Light source		Red semiconductor laser: Class 2 [IEC / EN / JIS / (56 (Note 4)] Maximum output: 1 mW, Peak emission wavelen		

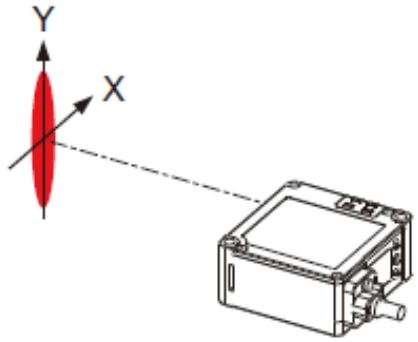
Light receiving element	CMOS image sensor		
Power supply voltage	Power supply units with a current capacity of 500 DC ±10 %, ripple 0.5 V (P-P)		
Current consumption	150 mA or less (Note 5)		
Sampling cycle	100 µs, 200 µs, 500 µs, 1 ms, 2 ms		
Analog output	Output mode switchable by changing the setting		
			When voltage output is selecte
		Output scale (Default value)	0 V to 5 V / F.S.
		Normal output range	0 V to 5.25 V
		Alarm *1	5.3 V ± 20 mV
		Indeterminate state	5.5 V ± 20 mV
		Impedance	Output impedance: 100
		Resolution *2	± 2 mV
		Linearity *3	±0.05 % F.S.
		Temperature characteristics	0.005 % F.S./°C
		*1: The value that will be output w analog output is set to Alarm. Whe value immediately before alarm oc	

			held. *2: This refers to the repeatability only. Static resolution and linearity measurement will be added. *3: This refers to the linearity of ar Static resolution and linearity erro measurement will be added. This c the repeatability of analog output
Control output	**OUT 1** **OUT 2** **OUT 3**	• Possible to switch over between NPN transistor transistor open collector by changing the setting • Possible to switch over between judgment outp changing the setting <When NPN output is selected> • Maximum sink current: 50 mA • Applied voltage: 26.4 V DC or less (between out • Residual voltage: 2 V or less (at 50 mA sink curr • Leakage current: 0.1 mA or less <When PNP output is selected> • Maximum source current: 50 mA • Residual voltage: 2.8 V or less (at 50 mA source • Leakage current: 0.1 mA or less	
	Output type	Possible to switch over between open and close v the setting	
	Protection	Equipped (Automatic recovery type) * This is not	
External input	**IN 1** **IN 2** **IN 3**	• Possible to switch over from trigger, zero setting laser stop, teaching, or bank by changing the set • The input conditions are interlocked with NPN / output <When NPN output is selected> • Source current: 1.5 mA approx. • Input conditions Invalid: 3 to 26.4 V DC or open Valid: 0 to 1.5 V DC <When PNP output is selected> • Sink current: 2.5 mA approx. • Input conditions Invalid: 0 to 11 V DC or open	

		Valid: 19 to 26.4 V DC
Indicators	**Laser radiation**	Green LED (Lit while laser beams are being emitt
	Alarm	Orange LED (Lit when measurement is not possib excessive received light intensity, or due to exces
Display section		0.9 inch organic EL Measured value: signed 5-digit (maximum of 4 di
Pollution degree		2
Operating altitude(Note 6)		2,000 m 6561.680 ft or less
Grounding method		Capacitor grounding
Environmental resistance	**Protection**	IP67 (IEC)
	Ambient temperature	-10 to +45 °C -14 to 113 °F (No icing allowed), Sto (No icing allowed)
	Ambient humidity	35 to 85 % RH (No condensation allowed), Storag condensation allowed)
	Ambient illuminance	Incandescent light: 3,000 ℓx or less at the light-re
	Insulation resistance	20 MΩ or higher, using 500 V DC megger
	Withstand voltage	1,000 V AC between all terminals and case for 1 r
	Vibration resistance	10 to 55 Hz (period: 1 min.) frequency, 1.5 mm 0. and Z directions for two hours each
	Shock resistance	500 m/s^2 acceleration (50 G approx.) in X, Y and Z
Material		Product casing: Aluminum die casting, Front cove
Weight		Net weight: 150 g approx., Gross weight: 200 g a

Notes :

1) Unless otherwise specified, the above specifications are typical values measured under the following measurement conditions. They do not guarantee performance for all target objects.
Power supply voltage: 24 V DC, ambient temperature: 20 °C 68 °F, sampling cycle: 1 ms, average count: 512 times, measurement center distance, target object: visible light shielding ceramic
2) The X and Y axes of the beam diameter are specified as shown in the figure follow.



3) The beam diameter is defined as $1/e^2$ (approx. 13.5 %) of the center light intensity. Due to leak light outside the defined range, the measurement values may be affected if the reflectance around the detecting point is higher than that of the detecting point.
4) This product complies with the FDA regulations (FDA 21 CFR 1040.10 and 1040.11) in accordance with FDA Laser Notice No. 56, except for complying with IEC 60825-1 Ed. 3.
5) Current consumption of the sensor only. External input current is not included.
6) Do not use or store this product in environments where ambient air is pressurized to an air pressure higher than the atmospheric pressure at an altitude of 0 m.