

INDUCTANCE TYPE PROBE CODE 9420-AP02

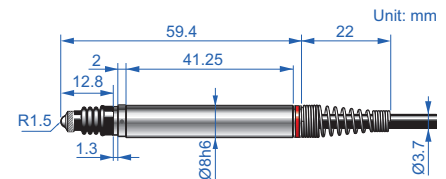
IP65
WATERPROOF



- Ultra-short length, built-in precision linear ball bearings
- For highly accurate and repeatable displacement measurements of displacement, deformation, dimension, vibration, thickness, expansion, etc. in quality control and metrology applications

SPECIFICATION

Range	±0.9mm
Resolution	0.1µm
Accuracy	±0.3+3× L ³µm, (L is measuring length in mm)
Repeatability	0.15µm
Thermal drift	0.25µm/°C
Mechanical stroke	2.2mm
Sensor type	LVDT
Measuring force	0.75N (measuring rod vertical down at 0±25% potential)
Protective cover	fluorinated elastomer
Contact type	carbide
Insert thread	M2.5
Sampling frequency	≥80ms
Operation environment	work: -10~60°C; storage: -20~100°C
Cable length	2m (customized from 2~5m)
Output interface	5-wire aviation interface
Weight	16g



DIGITAL LINEAR GAUGES

**INSPECTION
CERTIFICATE**



ABSOLUTE ENCODER, THE ORIGINAL
DATA REMAINS AFTER POWER OFF

DUSTPROOF
WATERPROOF

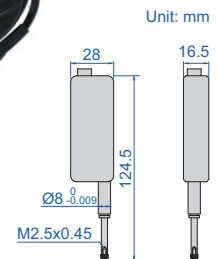
- Scale type: optical grating
- Absolute encoder, the original data remains after power off
- Digital signal output, amplifier is not required
- Measuring force: ≤1.5N
- Dust/waterproof: IP43/IP66
- Baud rate: 9600 (can be customized)
- Cable length: 3m (can be customized)
- Optional accessory: software of linear gauge (code: **7130-SOFTWARE**, 8 probes can be connected at the same time, need to purchase the corresponding hubs)



7130-10



7130-10L



Dust/waterproof IP43, resolution 0.1µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7130-10	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7130-10L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7130-11	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7130-11L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	
7130-12	0-12.5mm	0.5µm	1µm	horizontal	RS485 (VCC+5~12V)	
7130-12L	0-12.5mm	0.5µm	1µm	vertical	RS485 (VCC+5~12V)	
7130-13	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7130-13L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7130-14	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7130-14L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	

To be continued

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Dust/waterproof IP43, resolution 0.5µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7130-20	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7130-20L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7130-21	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7130-21L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	
7130-22	0-12.5mm	1.5µm	3µm	horizontal	RS485 (VCC+5~12V)	
7130-22L	0-12.5mm	1.5µm	3µm	vertical	RS485 (VCC+5~12V)	
7130-23	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7130-23L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7130-24	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7130-24L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	

Dust/waterproof IP66, resolution 0.1µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7130-30	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7130-30L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7130-31	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7130-31L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	
7130-32	0-12.5mm	0.5µm	1µm	horizontal	RS485 (VCC+5~12V)	
7130-32L	0-12.5mm	0.5µm	1µm	vertical	RS485 (VCC+5~12V)	
7130-33	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7130-33L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7130-34	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7130-34L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	

Dust/waterproof IP66, resolution 0.5µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7130-40	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7130-40L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7130-41	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7130-41L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	
7130-42	0-12.5mm	1.5µm	3µm	horizontal	RS485 (VCC+5~12V)	
7130-42L	0-12.5mm	1.5µm	3µm	vertical	RS485 (VCC+5~12V)	
7130-43	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7130-43L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7130-44	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7130-44L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	

software of linear gauge (optional)

view and export historical trend

view and export historical data

real-time data

real-time trend

data trend chart

the software can set tolerance and make real-time judgment (red when out of tolerance, green when within tolerance), set zero, data collection interval time, color, type and line width of trend lines, can view and export data to Excel report or BMP image

PNEUMATIC DIGITAL LINEAR GAUGES

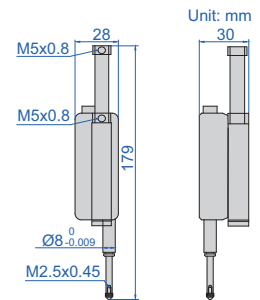
DUSTPROOF
WATERPROOF

ABSOLUTE ENCODER, THE ORIGINAL
DATA REMAINS AFTER POWER OFF



7134-10L

- Scale type: optical grating
- Absolute encoder, the original data remains after power off
- Digital signal output, amplifier is not required
- Air pressure: 0.2-0.5MPa
- Measuring force: $\leq 1.5\text{N}$
- Dust/waterproof: IP43/IP66
- Baud rate: 9600 (can be customized)
- Cable length: 3m (can be customized)
- Optional accessory: software of linear gauge (code: **7130-SOFTWARE**, 8 probes can be connected at the same time, need to purchase the corresponding hubs)



Dust/waterproof IP43, resolution 0.1µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7134-10	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7134-10L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7134-11	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7134-11L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	
7134-12	0-12.5mm	0.5µm	1µm	horizontal	RS485 (VCC+5~12V)	
7134-12L	0-12.5mm	0.5µm	1µm	vertical	RS485 (VCC+5~12V)	
7134-13	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7134-13L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7134-14	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7134-14L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	




Dust/waterproof IP43, resolution 0.5µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7134-20	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7134-20L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7134-21	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7134-21L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	
7134-22	0-12.5mm	1.5µm	3µm	horizontal	RS485 (VCC+5~12V)	
7134-22L	0-12.5mm	1.5µm	3µm	vertical	RS485 (VCC+5~12V)	
7134-23	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7134-23L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7134-24	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7134-24L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	




To be continued

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Dust/waterproof IP66, resolution 0.1µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7134-30	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7134-30L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7134-31	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7134-31L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	
7134-32	0-12.5mm	0.5µm	1µm	horizontal	RS485 (VCC+5~12V)	
7134-32L	0-12.5mm	0.5µm	1µm	vertical	RS485 (VCC+5~12V)	
7134-33	0-12.5mm	0.5µm	1µm	horizontal	RS232, TTL level	
7134-33L	0-12.5mm	0.5µm	1µm	vertical	RS232, TTL level	
7134-34	0-12.5mm	0.5µm	1µm	horizontal	RS232, 232 level	
7134-34L	0-12.5mm	0.5µm	1µm	vertical	RS232, 232 level	

Dust/waterproof IP66, resolution 0.5µm

Code	Range	Repeatability	Accuracy	Outgoing cable direction	Output signal	Output interface
7134-40	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7134-40L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7134-41	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7134-41L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	
7134-42	0-12.5mm	1.5µm	3µm	horizontal	RS485 (VCC+5~12V)	
7134-42L	0-12.5mm	1.5µm	3µm	vertical	RS485 (VCC+5~12V)	
7134-43	0-12.5mm	1.5µm	3µm	horizontal	RS232, TTL level	
7134-43L	0-12.5mm	1.5µm	3µm	vertical	RS232, TTL level	
7134-44	0-12.5mm	1.5µm	3µm	horizontal	RS232, 232 level	
7134-44L	0-12.5mm	1.5µm	3µm	vertical	RS232, 232 level	

software of linear gauge (optional)

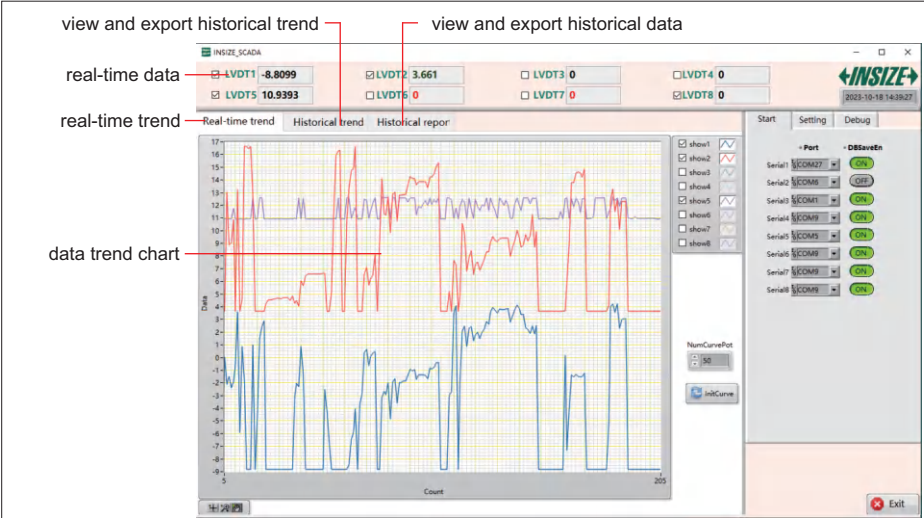
view and export historical trend

view and export historical data

real-time data

real-time trend

data trend chart



the software can set tolerance and make real-time judgment (red when out of tolerance, green when within tolerance), set zero, data collection interval time, color, type and line width of trend lines, can view and export data to Excel report or BMP image

MULTICHANNEL INTERFACE BOXES OF LINEAR GAUGES



- Can be connected with 7130 or 7134 series linear gauges
- Optional accessory: software of linear gauge (code:7130-SOFTWARE, 8 linear gauges can be connected simultaneously)

software of linear gauge (optional)

view and export historical trend

view and export historical data

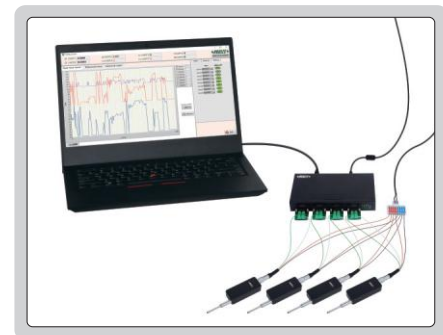
real-time data

real-time trend

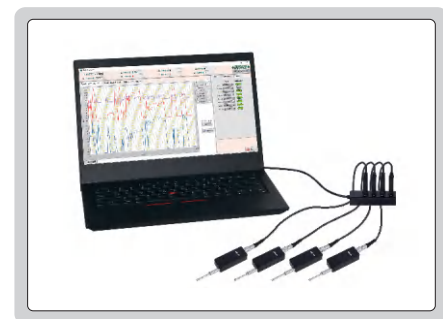
data trend chart

the software can set tolerance and make real-time judgment (red when out of tolerance, green when within tolerance), set zero, data collection interval time, color, type and line width of trend lines, can view and export data to Excel report or BMP image

7212-4A application



7324-HUB4 application



SPECIFICATION

Code	7212-4A	7212-8A	7324-HUB4	7324-HUB7	7324-HUB16
Quantity of linear gauges	4	8	4	7	16
Applicable linear gauges	7130-12, 7130-12L, 7130-22, 7130-22L, 7130-32, 7130-32L, 7130-42, 7130-42L, 7134-12, 7134-12L, 7134-22, 7134-22L, 7134-32, 7134-32L, 7134-42, 7134-42L		7130-10, 7130-10L, 7130-20, 7130-20L, 7130-30, 7130-30L, 7130-40, 7130-40L, 7134-10, 7134-10L, 7134-20, 7134-20L, 7134-30, 7134-30L, 7134-40, 7134-40L		
Type of linear gauge	RS485 protocol		RS232 protocol		
Type of output	USB		USB		

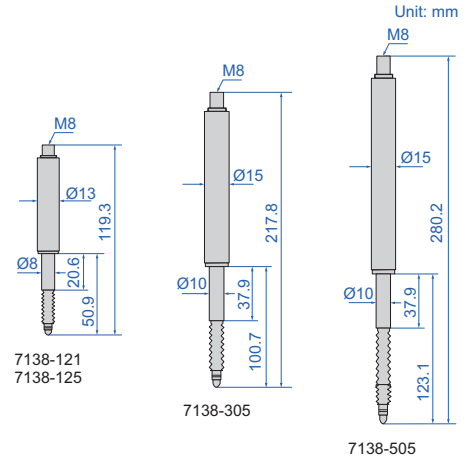
IP67
WATERPROOF



LINEAR GAUGES



7138-121



- Linear gauge type: optical grating
- Dust/waterproof: IP67
- Optional accessory: display unit (code **7131-1A**, can output keyboard signal, transmit data to excel, word, txt etc., also can output serial signal and transmit data to serial communication software)

L-connection cable
(optional)



straight connection cable
(optional)



application



SPECIFICATION

Code	7138-121	7138-125	7138-305	7138-505
Range	12mm	12mm	30mm	50mm
Resolution	0.1µm	0.5µm	0.5µm	0.5µm
Accuracy	±1µm	±2µm	±3µm	±3.5µm
Power supply	DC 5V, 300mA			
Output signal *	TTL signal			
Operation environment	0~40°C, 20~80%RH (non-condensing)			
Storage environment	-10~60°C, 20~80%RH (non-condensing)			
Dimension	Ø13×120mm		Ø15×218mm	Ø15×281mm
Weight	60g		130g	170g

* Output signal 485 or 232 is optional

OPTIONAL ACCESSORY

Display unit	7131-1A
L-connection cable	7138-L
Straight connection cable	7138-Z

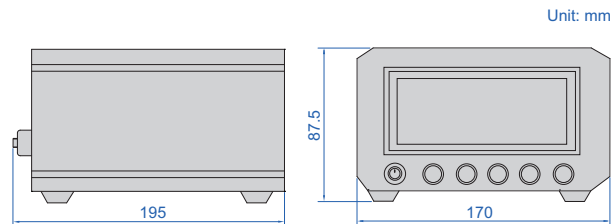
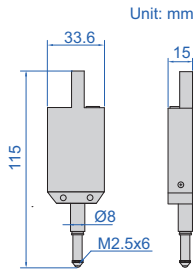
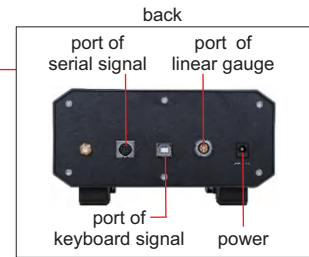
LINEAR GAUGES AND DISPLAY UNIT



linear gauge
7131-01



display unit
7131-1A



- Linear gauge type: optical grating
- Display unit: display displacement data in real time, data preset, set tolerance and make judgment (out of upper tolerance, within tolerance, out of lower tolerance), set zero, change measuring direction, resolution (0.1µm/1µm), unit switch (µm/mm/inch)
- Two data transmission methods: can output keyboard signal and data can be transmitted to excel, word, txt etc, can also output serial signal and transmit data to serial communication software

LINEAR GAUGE SPECIFICATION

Code	7131-01	7131-02
Range	12.5mm	12.5mm
Resolution	0.1µm	1µm
Accuracy (19~20°C)	1µm	3µm
Repeatability	0.2µm	2µm
Linear gauge type	optical grating	
Working life	ten million times	
Dust/waterproof	IP50	
Measuring force	0.7±0.3N	
Cable length	900mm	
Operation environment	0~40°C, 20~80%RH	
Power supply	5~24V	
Dimension (L×W×H)	33.6×15×115mm	
Weight	133g	

spindle lift knob is included



application



DISPLAY UNIT SPECIFICATION

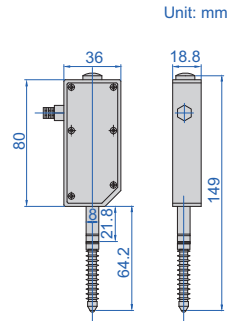
Code	7131-1A
Display	4" LCD screen
Unit	µm, mm, inch
Quantity of linear gauge to be connected	1 pc
Dimension (L×W×H)	170×195×87.5mm
Weight	1.45kg

IP65
WATERPROOF

CAPACITANCE LINEAR GAUGES



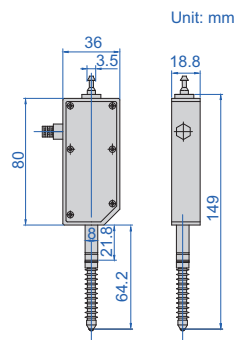
7107-12



7107-11
7107-12



7107-12V



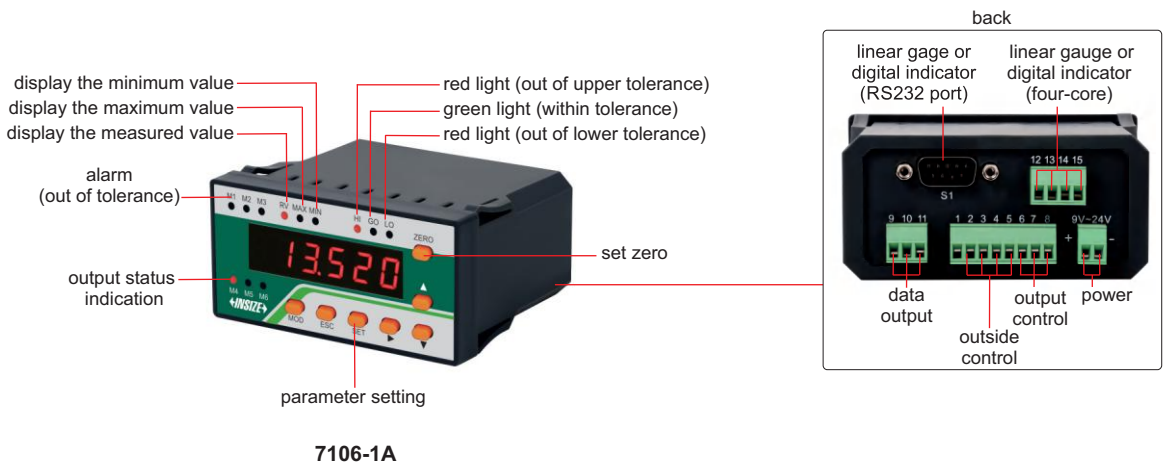
7107-11V
7107-12V

- Capacitance type linear encoder
- Shock-proof, water proof, dust proof, suitable for high speed movement, long working life
- Optional: display unit **7106-1A**, multichannel interface box **7107-1** or **7107-2**

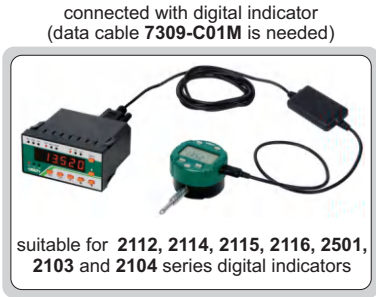
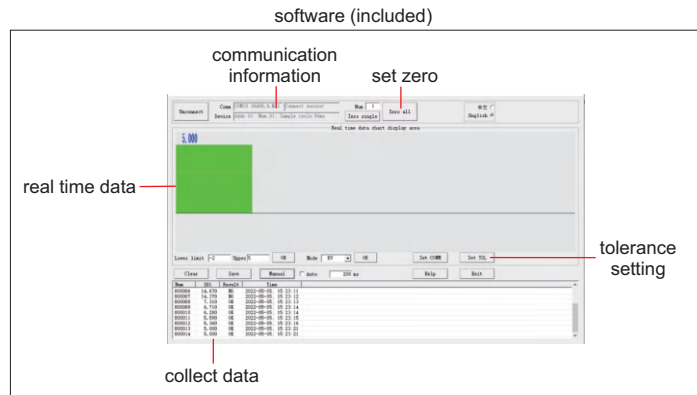
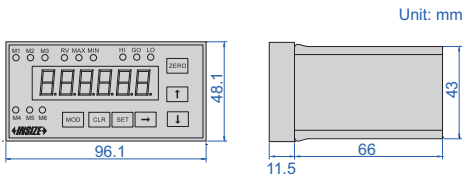
SPECIFICATION

Code	7107-11	7107-12	7107-11V	7107-12V
Measuring range	12mm/0.47"	12mm/0.47"	12mm/0.47"	12mm/0.47"
Resolution	0.01mm/0.0004"	0.001mm/0.00004"	0.01mm/0.0004"	0.001mm/0.00004"
Accuracy	20µm	5µm	20µm	5µm
Hysteresis	10µm	2µm	10µm	2µm
Driving type	spring		pneumatic	
Measuring force	1.5N		adjusted by air pressure	
Measuring principle	capacitance type linear encoder			
Voltage	5V			
Sampling frequency	100 times/sec			
Working life	ten million times			
Dust/waterproof	IP65			
Cable length	2m			
Data output	RS232			

DISPLAY UNIT FOR CAPACITANCE LINEAR GAUGES CODE 7106-1A



- Can be connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauge, can also be connected with digital indicator (data cable **7309-C01M** is needed)
- Set tolerance and make judgment (out of upper tolerance, within tolerance, out of lower tolerance), output the judgment to control outside devices, control from outside (set zero, hold reading and collect data)
- Software of display unit (included): in the software, it is possible to set tolerance and show judgment (red when out of tolerance, green when within tolerance), set zero, collect data manually or automatically (time is adjustable), output data to Excel, print report

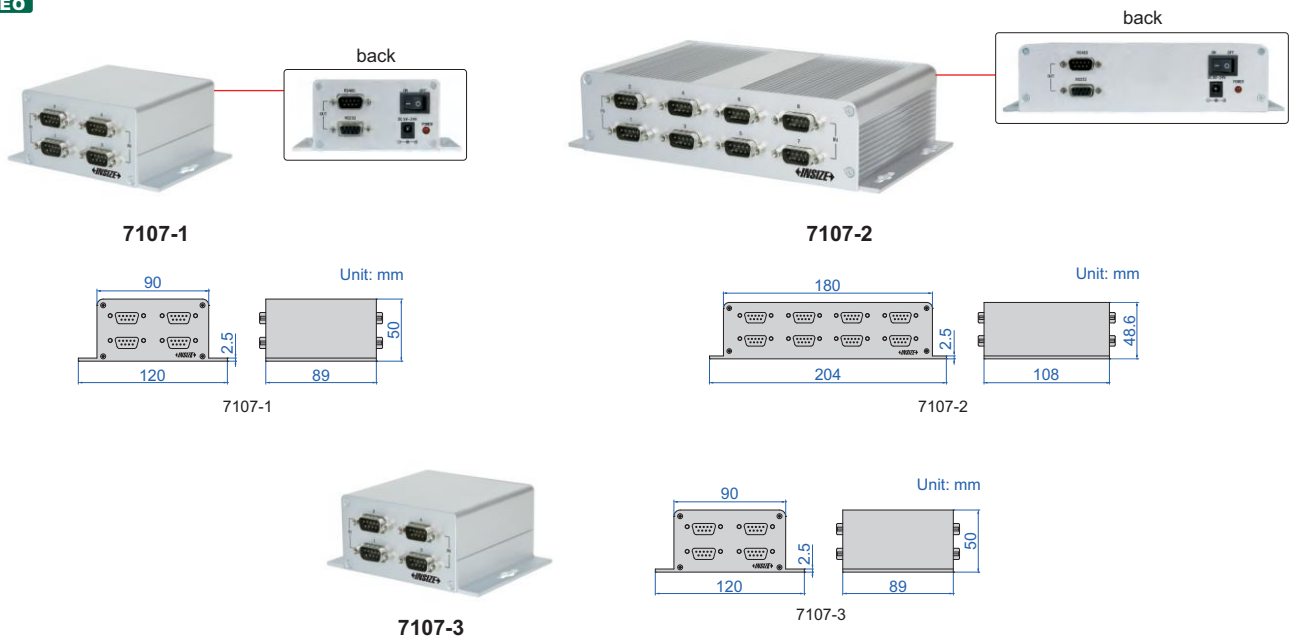


SPECIFICATION

Display	6 digits
Quantity of linear gauge or digital indicator to be connected	1 pc
Tolerance	set tolerance and make judgment with alarm and lights (out of upper tolerance, within tolerance, out of lower tolerance)
Output control	output the tolerance judgment (out of upper tolerance, within tolerance, out of lower tolerance) to control outside devices
Outside control	control the display units from outside (set zero, hold reading and collect data)
Data output	connect to computer software and serial communication
Power supply	DC 9~24V

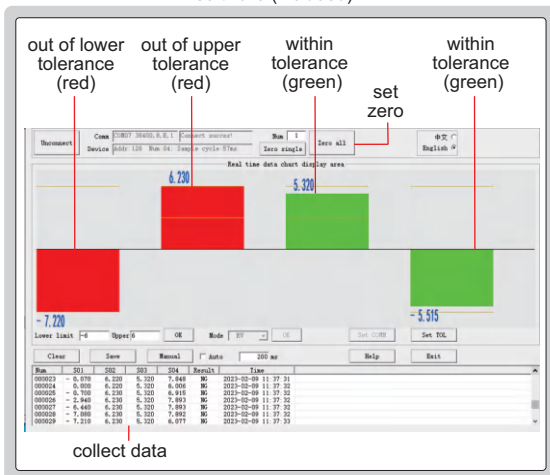


MULTICHANNEL INTERFACE BOXES FOR CAPACITANCE LINEAR GAUGES

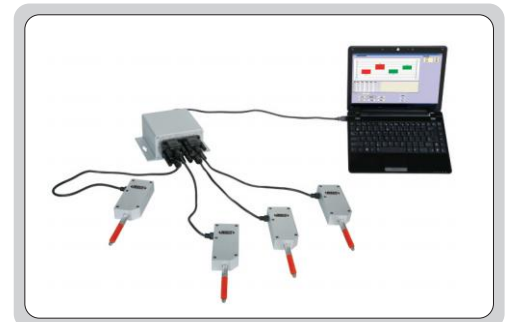


- Can be connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauges, can also be connected with digital indicators (data cable **7309-C01M** is needed)
- Connection box (code: **7107-3**) is needed to connect interface boxes, when two or more interface boxes are used. Maximum 4 interface boxes can be connected.
- Software of interface boxes (included): in the software, it is possible to set tolerance of each channel and show judgment (red when out of tolerance, green when within tolerance), set zero, collect data manually or automatically (time is adjustable), output data to Excel, print report.

software (included)



connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauges



INTERFACE BOX SPECIFICATION

Code	7107-1	7107-2
Quantity of linear gauges or digital indicators to be connected	4 pcs	8 pcs
Data output	RS232 and RS485	
Power supply	DC 9~24V	

CONNECTION BOX (OPTIONAL) SPECIFICATION

Code	7107-3
Quantity of interface boxes to be connected	4 pcs (maximum 4 interface boxes can be connected)
Data output	RS232 and RS485
Power supply	DC 9~24V

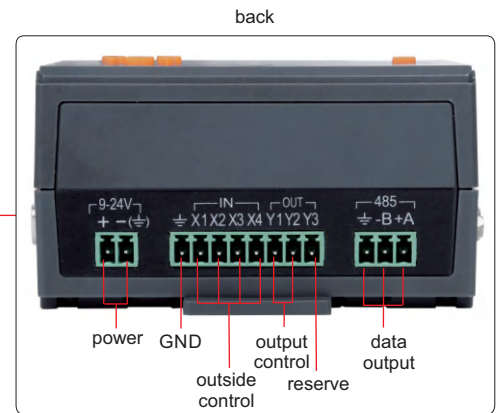
connected with digital indicators (data cable **7309-C01M** is needed)



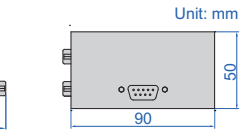
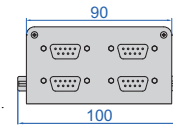
MULTICHANNEL DISPLAY UNITS



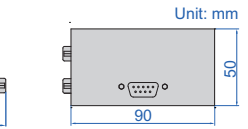
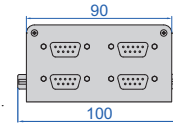
7133-1



7133-2



7133-1



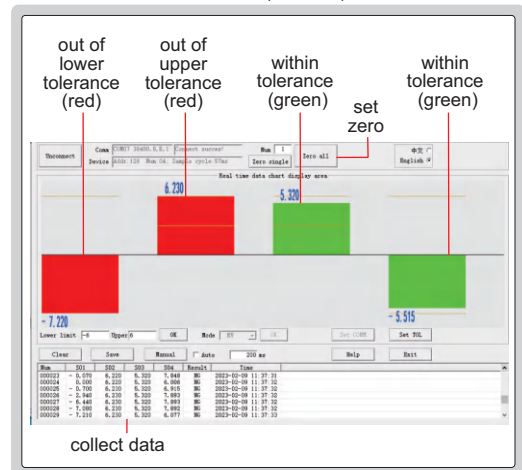
7133-2

- Can be connected with 7107-11, 7107-12, 7107-11V or 7107-12V linear gauges, can also be connected with digital indicators (data cable 7309-C01M is needed)
- To connect more than 4 linear gauges or digital indicators, need to purchase the connection box (code: 7133-2), and one display unit can be connected with up to 14 connection boxes
- Set tolerance and make judgment (out of tolerance, within tolerance), output the judgment to control outside devices, control from outside (set zero, hold reading and collect data)
- Software of display unit (included): in the software, it is possible to set tolerance and show judgment (red when out of tolerance, green when within tolerance), set zero, collect data manually or automatically (time is adjustable), output data to Excel, print report

DISPLAY UNIT SPECIFICATION

Code	7133-1
Display	6 digits
Quantity of linear gauges or digital indicators to be connected	4 pcs
Tolerance	set tolerance and make judgment with lights (out of tolerance, within tolerance)
Output control	output the tolerance judgment (out of tolerance, within tolerance) to control outside devices
Outside control	control the display units from outside (set zero, hold reading and collect data)
Data output	connect to computer software and serial communication
Power supply	DC 9~24V

software (included)







CONNECTION BOX (OPTIONAL) SPECIFICATION

Code	7133-2
Quantity of linear gauges or digital indicators to be connected	4 pcs

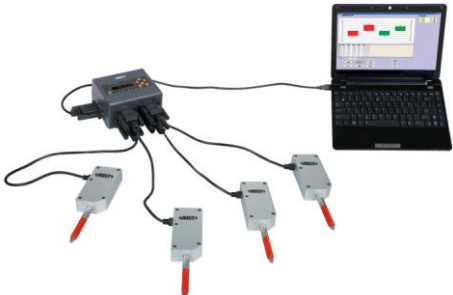

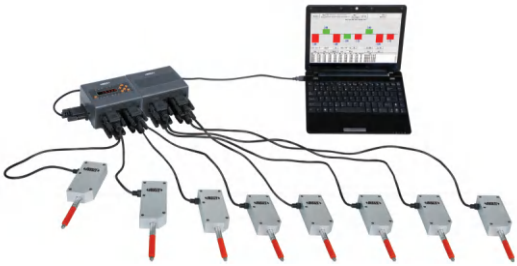

To be continued

Continued from previous page

use without computer
(measurement data of each channel can be switched to display on the display unit)

<p>display unit is connected with linear gauge (code 7107-11, 7107-12, 7107-11V or 7107-12V)</p> 	<p>display unit is connected with digital indicators (data cable 7309-C01M is needed)</p>  <p>suitable for 2112, 2114, 2115, 2116, 2501, 2103 and 2104 series digital indicators</p>
<p>display unit and connection box are connected with linear gauges (code 7107-11, 7107-12, 7107-11V or 7107-12V)</p> 	<p>display unit and connection box are connected with digital indicators (data cable 7309-C01M is needed)</p>  <p>suitable for 2112, 2114, 2115, 2116, 2501, 2103 and 2104 series digital indicators</p>

use with computer
(measurement data of all channel can be displayed in the software)

<p>display unit is connected with linear gauge (code 7107-11, 7107-12, 7107-11V or 7107-12V)</p> 	<p>display unit is connected with digital indicators (data cable 7309-C01M is needed)</p>  <p>suitable for 2112, 2114, 2115, 2116, 2501, 2103 and 2104 series digital indicators</p>
<p>display unit and connection box are connected with linear gauges (code 7107-11, 7107-12, 7107-11V or 7107-12V)</p> 	<p>display unit and connection box are connected with digital indicators (data cable 7309-C01M is needed)</p>  <p>suitable for 2112, 2114, 2115, 2116, 2501, 2103 and 2104 series digital indicators</p>

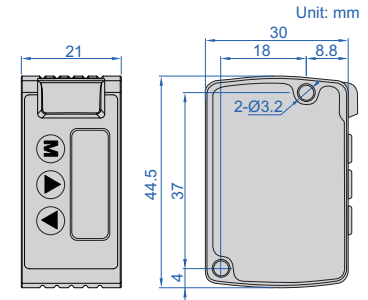
LASER DISPLACEMENT SENSORS

IP67
WATERPROOF

- High accuracy, non-contact measurement, high speed response, multiple measurement modes, environmental adaptability, programmable control, rich data output interface and easy maintenance
- Can be used in automated production lines, robotic arms, packaging equipment, printing equipment, medical equipment etc.



LDS-N30-RS



STANDARD DELIVERY

Main unit	1 pc
Mounting bracket	1 pc
Cable	1 pc

SPECIFICATION

Code	NPN	LDS-N30	LDS-N50	LDS-N100	LDS-N200	LDS-N400
	NPN+Analog	LDS-N30-MC	LDS-N50-MC	LDS-N100-MC	LDS-N200-MC	LDS-N400-MC
	NPN+RS485	LDS-N30-RS	LDS-N50-RS	LDS-N100-RS	LDS-N200-RS	LDS-N400-RS
Detection method	diffuse reflection					
Basis (center) distance	30mm	50mm	100mm	200mm	400mm	
Detection range (F.S.)	25~35mm	35~65mm	65~135mm	120~280mm	200~600mm	
Full scale	10mm	30mm	70mm	160mm	400mm	
Repeat accuracy	10µm	30µm	70µm	200µm	200~400mm: 600µm 400~600mm: 1500µm	
Linear accuracy	±0.2% F.S.				200~400mm: ±0.2% F.S. 200~400mm: ±0.3% F.S.	
Temperature drift characteristics	±0.03% F.S./°C					
Light source	medium	red diode laser, wavelength 655nm				
	output power	<1mW				
	laser class	IEC class 2				
Light spot diameter	Ø50µm	Ø70µm	Ø120µm	Ø300µm	Ø500µm	
Output	switch mode	NPN open collector, ≤50mA/DC 24V, residual voltage<1.5V				
	analog	analogue voltage: 0~5V (alarm: 5.2V), analogue current: 4~20mA (alarm: 0mA), Chinese display switchable				
	operation	Light.on/Dark.on selectable				
Response time	1.5ms/5ms/10ms, switchable					
Power supply	DC12~24V					
No-load current	<30mA (at supply voltage 24V DC), <60mA (at supply voltage 12V DC)					
Indicator light	output indicator: yellow, power indicator: green					
Protection circuit	reverse polarity protection/surge protection/short circuit protection					
Protection level	IP67					
Withstand voltage	AC1000V, 50/60Hz, 1min					
Vibration resistance	10~55Hz (period 1min), double amplitude 1.5mm, 2H in each X/Y/Z direction					
Impact resistance	500m/S ² (approx. 50G), 3 times each in X/Y/Z direction					
Insulation impedance	50MΩ or more (DC500V megohmmeter)					
Material	cover case	aluminium alloy				
	lens	PMMA				
	guidewire	PVC (polyvinyl chloride)				
Connection	switching: lead-in type (4-pole, standard cable length 2m), analogue: lead-in type (5-pole, standard cable length 2m)					
Ambient illumination	incandescent lamp ≤ 3000lux, sunlight ≤ 20000lux					
Ambient temperature	operation: -10~45°C, storage: -20~60°C(non-freezing)					
Ambient humidity	operation: 35~85%RH, storage: 35~85%RH (non-condensing)					
Weight	85g (include cable)					

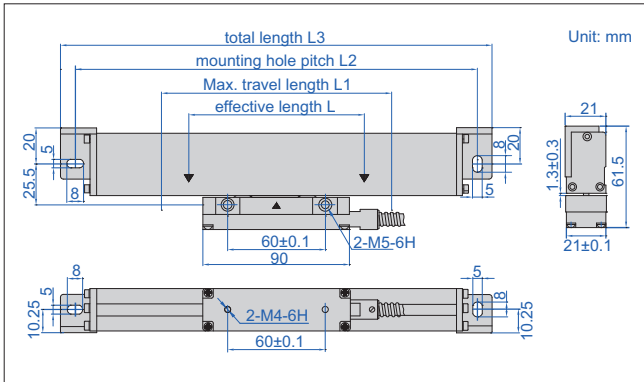
IP54
WATERPROOF



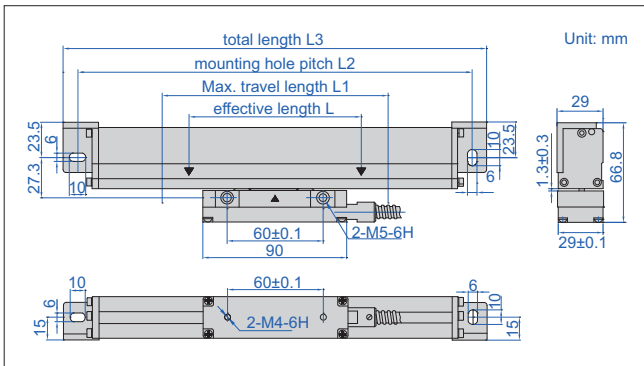
ISL-A1-300

- Optical TTL (Through-The-Lens) detection.
These optical TTL linear scales use an transistor logic to transmit and record high-resolution distance measurements. They are the most accurate type of encoder and are paired with **ISL-DR2/DR3** and **ISL-LCD7** (digital readout)

Series ISL-A1 and ISL-A5



Series ISL-B5

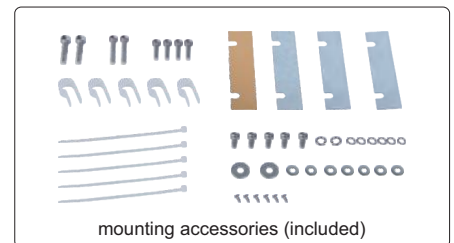
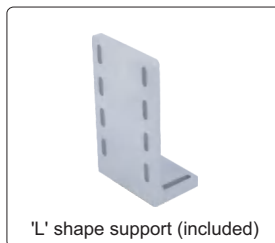


LINEAR SCALES (TTL SIGNAL)

Effective length (L)	Code		
	Thin type		Thick type
	Series ISL-A1	Series ISL-A5	Series ISL-B5
50mm	ISL-A1-50	ISL-A5-50	ISL-B5-50
100mm	ISL-A1-100	ISL-A5-100	ISL-B5-100
150mm	ISL-A1-150	ISL-A5-150	ISL-B5-150
200mm	ISL-A1-200	ISL-A5-200	ISL-B5-200
250mm	ISL-A1-250	ISL-A5-250	ISL-B5-250
300mm	ISL-A1-300	ISL-A5-300	ISL-B5-300
350mm	ISL-A1-350	ISL-A5-350	ISL-B5-350
400mm	ISL-A1-400	ISL-A5-400	ISL-B5-400
450mm	ISL-A1-450	ISL-A5-450	ISL-B5-450
500mm	ISL-A1-500	ISL-A5-500	ISL-B5-500
550mm	ISL-A1-550	ISL-A5-550	ISL-B5-550
600mm	ISL-A1-600	ISL-A5-600	ISL-B5-600
650mm	ISL-A1-650	ISL-A5-650	ISL-B5-650
700mm	ISL-A1-700	ISL-A5-700	ISL-B5-700
750mm	ISL-A1-750	ISL-A5-750	ISL-B5-750
800mm	ISL-A1-800	ISL-A5-800	ISL-B5-800
850mm	ISL-A1-850	ISL-A5-850	ISL-B5-850
900mm	ISL-A1-900	ISL-A5-900	ISL-B5-900
950mm	ISL-A1-950	ISL-A5-950	ISL-B5-950
1000mm	ISL-A1-1000	ISL-A5-1000	ISL-B5-1000
1100mm			ISL-B5-1100
1200mm			ISL-B5-1200
1300mm			ISL-B5-1300
1400mm			ISL-B5-1400
1500mm			ISL-B5-1500
1600mm			ISL-B5-1600
1700mm			ISL-B5-1700
1800mm			ISL-B5-1800
1900mm			ISL-B5-1900
2000mm			ISL-B5-2000
2100mm			ISL-B5-2100
2200mm			ISL-B5-2200
2300mm			ISL-B5-2300
2400mm			ISL-B5-2400
2500mm			ISL-B5-2500
2600mm			ISL-B5-2600
2700mm			ISL-B5-2700
2800mm			ISL-B5-2800
2900mm			ISL-B5-2900
3000mm			ISL-B5-3000
3100mm			ISL-B5-3100
3200mm			ISL-B5-3200

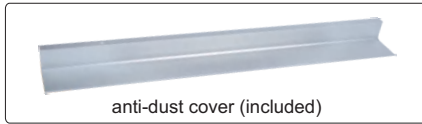
STANDARD DELIVERY

Main unit	1 pc
'L' shape support	1 pc
Anti-dust cover	1 pc
Plain base	1 pc (for L≥1500mm)
Mounting accessories	1 package

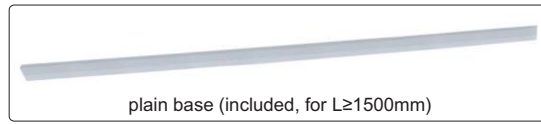


To be continued

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anti-dust cover (included)



plain base (included, for L≥1500mm)

SPECIFICATION

Code	Series ISL-A1		Series ISL-A5		Series ISL-B5	
L1 (mm)	L+30 (L≤900)	L+50 (L>900)	L+30 (L≤900)	L+50 (L>900)	L+30 (L≤900)	L+50 (L>900)
L2 (mm)	L+132 (L≤900)	L+152 (L>900)	L+132 (L≤900)	L+152 (L>900)	L+136 (L≤900)	L+156 (L>900)
L3 (mm)	L+148 (L≤900)	L+168 (L>900)	L+148 (L≤900)	L+168 (L>900)	L+154 (L≤900)	L+174 (L>900)
Resolution	1µm		5µm		5µm	
Max. response speed	50m/min		90m/min		60m/min	
Scale grating pitch	20µm					
Scale reference point pitch	50mm					
Accuracy	±(5+5L/1000)µm L is the effective length in mm					
Cable length	3.5m (L: 50-950mm), 5m (L: 1000-1500mm), 10m (L: 1600-3200mm)					
Output signal	TTL					
Socket	9PD					
Power supply	5±0.5V					

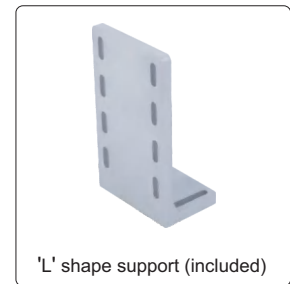
LINEAR SCALES (RS422 SIGNAL)

IP54
WATERPROOF

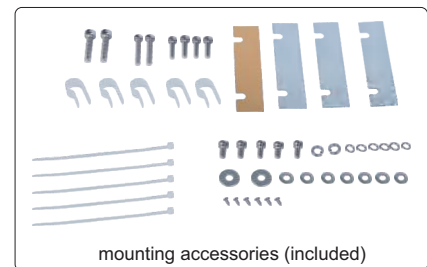
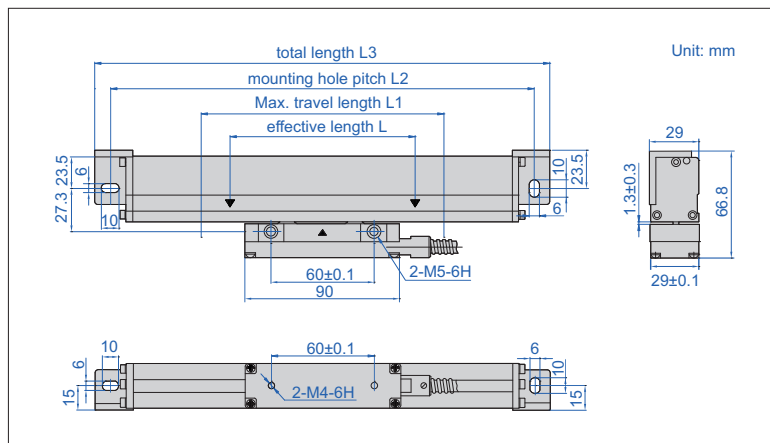


ISL-C5-450

- Connected to digital display box or PLC



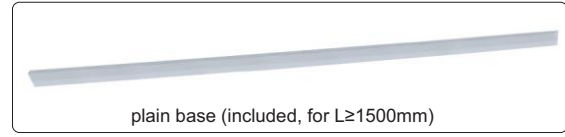
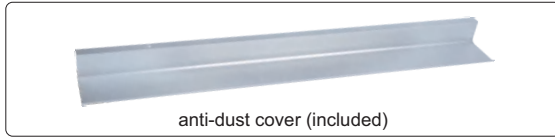
'L' shape support (included)



mounting accessories (included)

To be continued

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Effective length (L)	Code	
	Series ISL-C1	Series ISL-C5
50mm	ISL-C1-50	ISL-C5-50
100mm	ISL-C1-100	ISL-C5-100
150mm	ISL-C1-150	ISL-C5-150
200mm	ISL-C1-200	ISL-C5-200
250mm	ISL-C1-250	ISL-C5-250
300mm	ISL-C1-300	ISL-C5-300
350mm	ISL-C1-350	ISL-C5-350
400mm	ISL-C1-400	ISL-C5-400
450mm	ISL-C1-450	ISL-C5-450
500mm	ISL-C1-500	ISL-C5-500
550mm	ISL-C1-550	ISL-C5-550
600mm	ISL-C1-600	ISL-C5-600
650mm	ISL-C1-650	ISL-C5-650
700mm	ISL-C1-700	ISL-C5-700
750mm	ISL-C1-750	ISL-C5-750
800mm	ISL-C1-800	ISL-C5-800
850mm	ISL-C1-850	ISL-C5-850
900mm	ISL-C1-900	ISL-C5-900
950mm	ISL-C1-950	ISL-C5-950
1000mm	ISL-C1-1000	ISL-C5-1000

Effective length (L)	Code	
	Series ISL-C1	Series ISL-C5
1100mm	ISL-C1-1100	ISL-C5-1100
1200mm	ISL-C1-1200	ISL-C5-1200
1300mm	ISL-C1-1300	ISL-C5-1300
1400mm	ISL-C1-1400	ISL-C5-1400
1500mm	ISL-C1-1500	ISL-C5-1500
1600mm	ISL-C1-1600	ISL-C5-1600
1700mm	ISL-C1-1700	ISL-C5-1700
1800mm	ISL-C1-1800	ISL-C5-1800
1900mm	ISL-C1-1900	ISL-C5-1900
2000mm	ISL-C1-2000	ISL-C5-2000
2100mm	ISL-C1-2100	ISL-C5-2100
2200mm	ISL-C1-2200	ISL-C5-2200
2300mm	ISL-C1-2300	ISL-C5-2300
2400mm	ISL-C1-2400	ISL-C5-2400
2500mm	ISL-C1-2500	ISL-C5-2500
2600mm	ISL-C1-2600	ISL-C5-2600
2700mm	ISL-C1-2700	ISL-C5-2700
2800mm	ISL-C1-2800	ISL-C5-2800
2900mm	ISL-C1-2900	ISL-C5-2900
3000mm	ISL-C1-3000	ISL-C5-3000

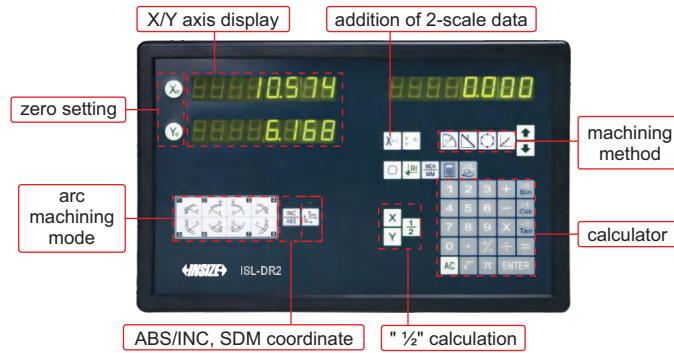
SPECIFICATION

Code	Series ISL-C1	Series ISL-C5
L1 (mm)	L+30 (L≤900), L+50 (L>900)	L+30 (L≤900), L+50 (L>900)
L2 (mm)	L+136 (L≤900), L+156 (L>900)	L+136 (L≤900), L+156 (L>900)
L3 (mm)	L+154 (L≤900), L+174 (L>900)	L+154 (L≤900), L+174 (L>900)
Resolution	1µm	5µm
Thickness	29mm	
Max. response speed	60m/min	
Scale grating pitch	20µm	
Scale reference point pitch	50mm	
Accuracy	±(5+5L/1000)µm, L is the effective length in mm	
Cable length	3.5m (L: 50-950mm), 5m (L: 1000-1900mm), 10m (L: 2000-3000mm)	
Output signal	RS422	
Socket	9 PD	
Power supply	5±0.25V	

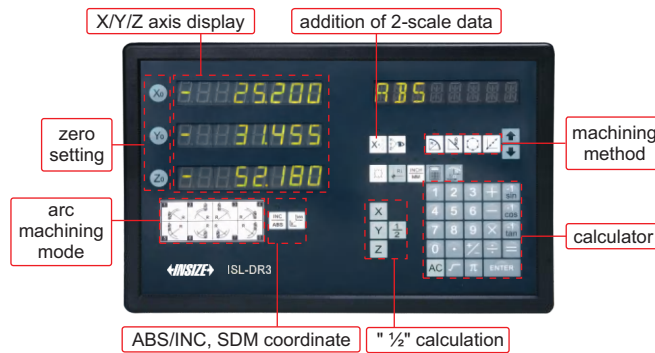
STANDARD DELIVERY

Main unit	1 pc
'L' shape support	1 pc
Anti-dust cover	1 pc
Plain base	1 pc (for L≥1500mm)
Mounting accessories	1 package

DIGITAL READOUTS



ISL-DR2



ISL-DR3



software flash disk (included)

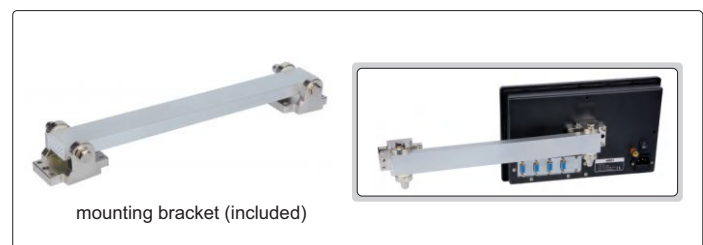
- For ISL-A1, ISL-A5, ISL-B5, ISL-C1, ISL-C5 series linear scales

SPECIFICATION

Code	ISL-DR2	ISL-DR3
Application	two-axis	three-axis
Scale input ports	2	3
Resolution	0.05µm, 0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, 5µm, 10µm, 20µm, 50µm	
Functions	addition of 2-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/contraction coefficient setting, "1/2" calculation, detecting RI, bolt-hole circle machining, ramp circle machining	
Power supply	110/220V, 50/60Hz	
Dimension	295×185×45mm	
Weight	1.45kg	

STANDARD DELIVERY

Main unit	1 pc
Mounting bracket	1 pc
Ground cable	1 pc
RS232C cable	1 pc
Software flash disk for RS232C	1 pc



mounting bracket (included)



DIGITAL READOUT CODE ISL-LCD7



- 7.57 inch LCD display
- Language: English, Simplified Chinese, Traditional Chinese
- Can be connected with ISL-A1, ISL-A5, ISL-B5, ISL-C1, ISL-C5 series linear scales



SPECIFICATION

Application	three-axis: X/Y/Z
Scale input ports	3
Resolution	0.05μm, 0.1μm, 0.2μm, 0.5μm, 1μm, 2μm, 5μm, 10μm, 20μm, 50μm
Function	X/Y/Z addition of 3-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/contraction coefficient setting, "1/2" calculation, detecting RI, bolt-hole circle machining, ramp circle machining, circular arc machining, oblique surface machining, automatic edge finding, discharge machining
Dimension	200×88×260mm
Weight	1.26kg

STANDARD DELIVERY

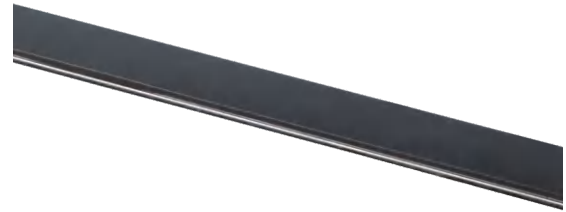
Main unit	1 pc
Mounting bracket	1 pc
Ground cable	1 pc
RS232C cable	1 pc
Software flash disk for RS232C	1 pc

MAGNETIC LINEAR SCALES (ABSOLUTE TYPE)

IP65
WATERPROOF



reader
LSK-A12



magnetic linear scale

- Absolute encoder, the original data remains after power off
- Support multiple communication protocols
- Cable length: 0.5m (can be customized up to 15m)
- Dust/waterproof: IP65

application



READER SPECIFICATION

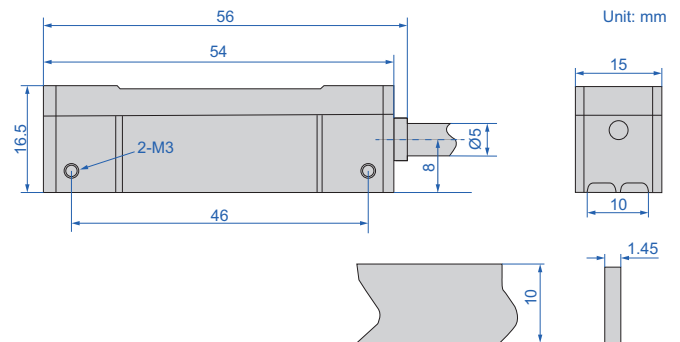
Code	Resolution	Repeatability	Max. response speed	Power supply	Current	Output protocol*	Output interface
LSK-A10	0.1μm	±0.5μm	5m/s	5V±5%	<200mA	BISS-C	
LSK-A11	0.5μm	±1μm					
LSK-A12	1μm	±2μm					
LSK-A20	0.1μm	±0.5μm					
LSK-A21	0.5μm	±1μm					
LSK-A22	1μm	±2μm					
LSK-A30	0.1μm	±0.5μm					
LSK-A31	0.5μm	±1μm					
LSK-A32	1μm	±2μm					

*The communication protocol can be customized to SSI, Panasonic, Tamagawa and RS485

MAGNETIC LINEAR SCALE

Code	Length**	Code	Length**
LSK-E1	1m	LSK-E9	9m
LSK-E2	2m	LSK-E10	10m
LSK-E3	3m	LSK-E11	11m
LSK-E4	4m	LSK-E12	12m
LSK-E5	5m	LSK-E13	13m
LSK-E6	6m	LSK-E14	14m
LSK-E7	7m	LSK-E15	15m
LSK-E8	8m	LSK-E16	16m

** Customized length according to customer requirements



MAGNETIC LINEAR SCALE SPECIFICATION

Pitch	2+2mm
Accuracy	±40μm
Max. length	16.3m

OPTIONAL ACCESSORY

Code	Name	Description
LSK-B01	assistant tool	mounting magnetic linear scales



assistant tool (optional)



IP65
WATERPROOF

MAGNETIC LINEAR SCALES (INCREMENTAL TYPE)

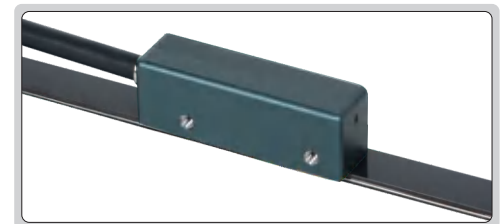


reader
LSK-B12



magnetic linear scale

application



- Magnetic grating scale, incremental type
- Output frequency: 1000Hz (can be customized up to 8000Hz)
- Cable length: 0.5m (can be customized up to 15m)
- Dust/waterproof: IP65

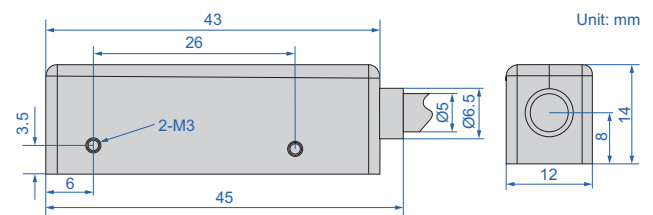
READER SPECIFICATION

Code	Resolution	Repeatability	Max. response speed	Power supply	Current	Output protocol	Output interface
LSK-B10	0.1μm	±0.5μm	5m/s	5V±5%	<50mA	RS422	
LSK-B11	0.5μm	±1μm					
LSK-B12	1μm	±2μm					
LSK-B20	0.1μm	±0.5μm					
LSK-B21	0.5μm	±1μm					
LSK-B22	1μm	±2μm					
LSK-B30	0.1μm	±0.5μm					
LSK-B31	0.5μm	±1μm					
LSK-B32	1μm	±2μm					

MAGNETIC LINEAR SCALE

Code	Length*	Code	Length*	Code	Length*
LSK-C1	1m	LSK-C10	10m	LSK-C19	10m
LSK-C2	2m	LSK-C11	11m	LSK-C20	19m
LSK-C3	3m	LSK-C12	12m	LSK-C25	25m
LSK-C4	4m	LSK-C13	13m	LSK-C30	30m
LSK-C5	5m	LSK-C14	14m	LSK-C35	35m
LSK-C6	6m	LSK-C15	15m	LSK-C40	40m
LSK-C7	7m	LSK-C16	16m	LSK-C45	45m
LSK-C8	8m	LSK-C17	17m	LSK-C50	50m
LSK-C9	9m	LSK-C18	18m		

* Customized length according to customer requirements

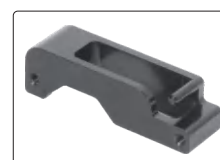


MAGNETIC LINEAR SCALE SPECIFICATION

Pitch	2+2mm
Accuracy	±40μm
Max. length	50m

OPTIONAL ACCESSORY

Code	Name	Description
LSK-B01	assistant tool	mounting magnetic linear scales



assistant tool (optional)