

**Data Management Softwares**  
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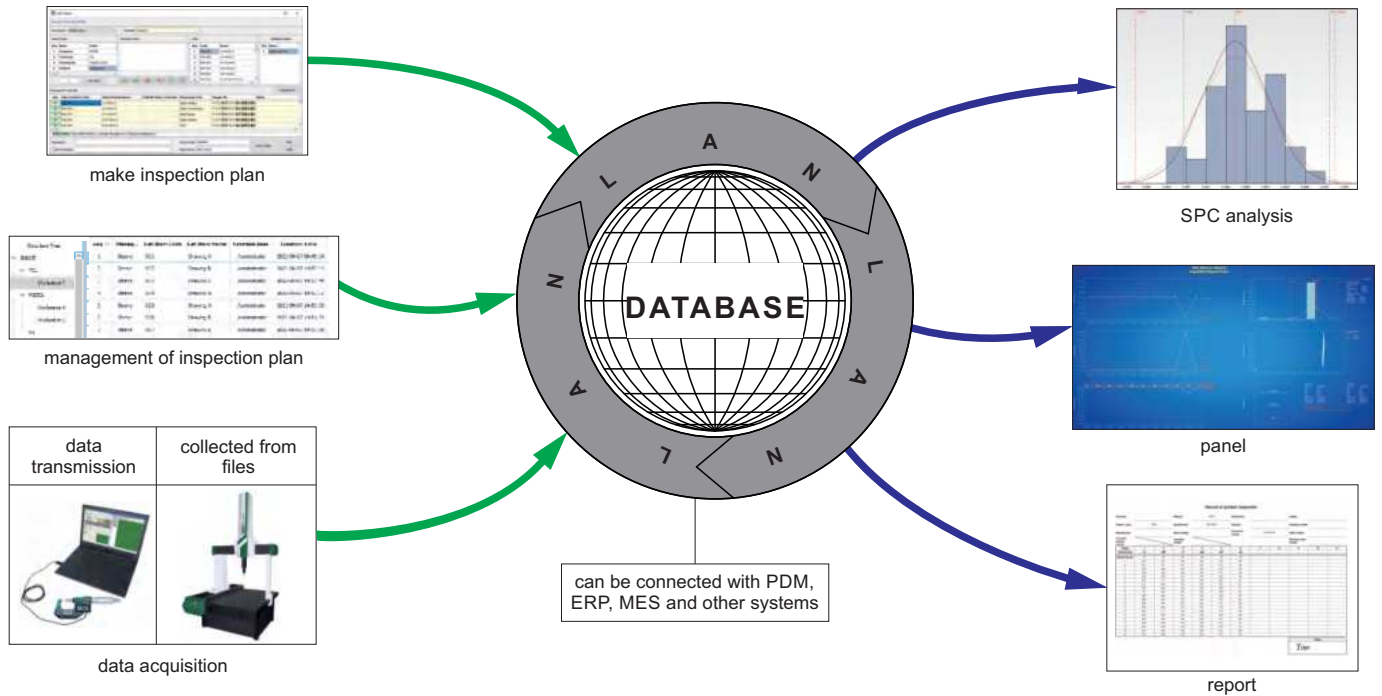


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# MEASUREMENT DATA MANAGEMENT AND ANALYSIS SOFTWARE



## Make inspection plan

- Define the dimensions, tolerances, control range and other parameters of workpieces



define the drawing of workpieces

- define association items of data
- define the measured dimension and tolerance

Seq	Data Member Code	Data Member Name	Measuring Tool	1	2	3	4	5	6
1	DC04070001	Check type							
2	DC04070002	Serial number							
3	DC04070003	Turnace No.							
4	DC02070001	Flatness0.008	CMM						
5	DC02070002	2.39+0.01/-0.03	Vertical caliper						
6	DC02070003	Verticality0.008	CMM						
7	DC02070004	2.335±0.004	Vertical caliper						
8	DC02070005	Outside diameter±0.002	Micrometer						
9	DC02070006	Inner diameter±0.002	Micrometer						
10	DC02070007	Wall thickness							

## Management of inspection plan

Seq	Manag...	List Item Code	List Item Name	Creation User	Creation Time
1	Sleeve	001	Drawing A	Administrator	2022-06-07 09:45:24
2	Sleeve	002	Drawing B	Administrator	2022-06-07 14:50:44
3	Sleeve	003	Drawing C	Administrator	2022-06-07 14:50:49
4	Sleeve	004	Drawing A	Administrator	2022-06-07 14:50:52
5	Sleeve	005	Drawing A	Administrator	2022-06-07 14:50:55
6	Sleeve	006	Drawing B	Administrator	2022-06-07 14:51:29
7	Sleeve	007	Drawing B	Administrator	2022-06-07 14:50:29

management by customers

management by drawings

management by departments

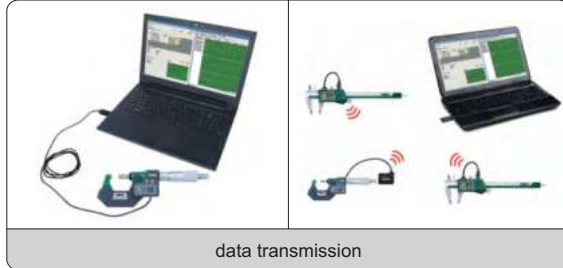
To be continued

Continued from previous page

## Data acquisition



manual input



data transmission



file parsing



screen capture

Measurement data management and analysis software(Standalone Edition) - Version: 8.0 / Build: 2021.05.11.1(Evaluation Version)

Seq	Data Member Code	Data Member Name	Measuring Tool	1	2	3	4	5
1	DC04070001	Check type		2022-06-08 10:58:07	2022-06-08 10:58:07	2022-06-08 10:58:08	2022-06-08 11:03:40	2022-06-08 11:16:40
2	DC04070002	Serial number		20220608001	20220608001	20220608001	20220608002	20220608002
3	DC04070003	Furnace No.		F00120	F00120	F00120	F00120	F00120
4	DC02070001	Flatness@.008	CMM	0.0080	0.0080	0.0080	0.0082	0.0082
5	DC02070002	2.39+0.01/-0.03	Vernier caliper	2.391	2.391	2.391	2.410	2.410
6	DC02070003	Verticality@.008	CMM	0.0080	0.0080	0.0080	0.0080	0.0080
7	DC02070004	2.325±0.004	Vernier caliper	2.3250	2.3250	2.3250	2.3250	2.3250
8	DC02070005	Outside diameter@-45±0.002	Micrometer	45.0020	45.0030	45.0020	44.9977	44.9977
9	DC02070006	Inner diameter@-45±0.002	Micrometer	45.0010	45.0010	45.0010	45.0010	45.0010
10	DC02070007	Wall thickness		0.0010	0.0020	0.0010	-0.0031	-0.0031
		Input User		Administrator	Administrator	Administrator	Administrator	Administrator

M: Template Code: MTC-0-0318 M: Template Name: Sleeve M: Item Code: 001 M: Item Name: Drawing A  
 Other Related Info: INSIZE -> TCL -> Workspace A  
 Enable Serial Port Data ID: AE  No Auto Match  Auto Match By Data ID  Auto Match By Specification  Auto Switch Record  
 Enable Data File Import Rule: Workspace A C:\Users\INSIZE\ENGINEER\Desktop\7317 Data import for workspace A.xlsx Import

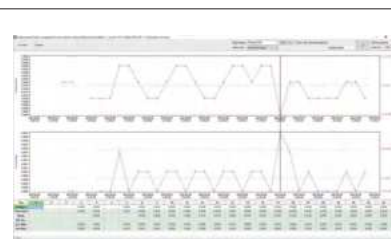
measurement interface

## SPC

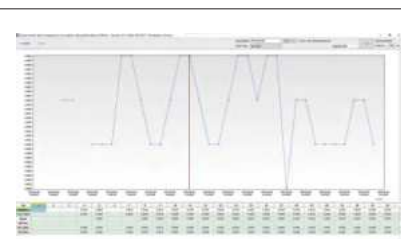
- Provide variety of quality analysis control charts



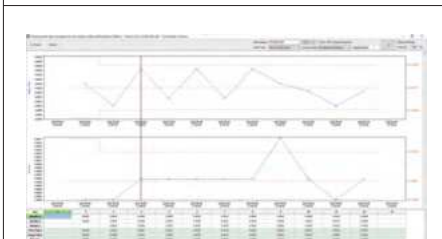
Xbar-R control chart



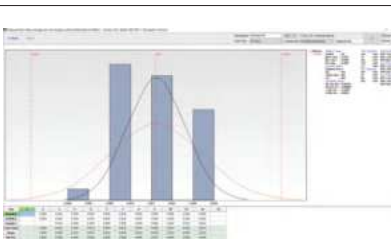
I-MR control chart



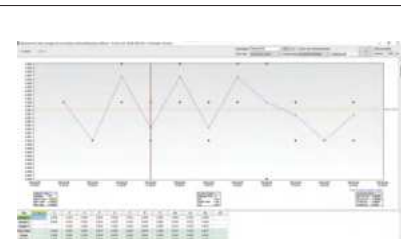
run control chart



Xbar-S control chart



CPK control chart



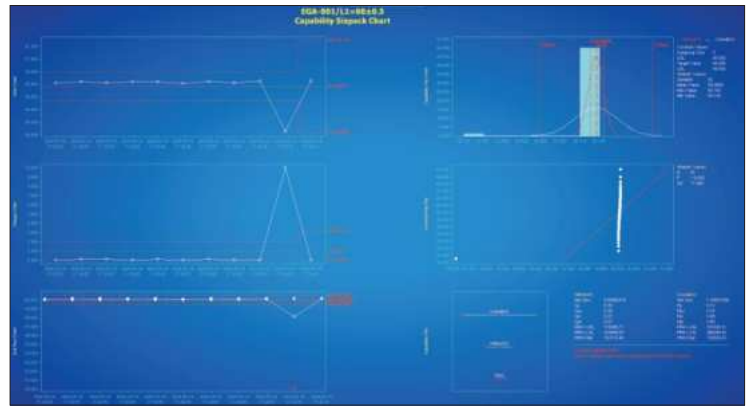
subgroup run chart

To be continued

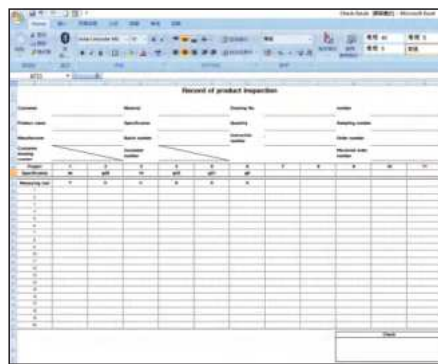
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**Panel**

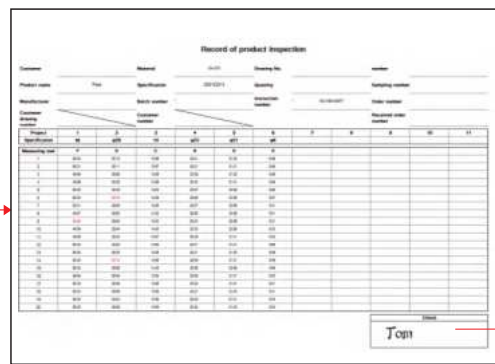
- Real-time display of SPC charts of multiple dimensions on the panel to monitor production quality



**Report**



report template



generate report

support exporting electronic signature

**Complete version**

Code	Data acquisition			SPC data analysis	Quality report	Real-time panel
	Manual input + Data transmission	File parsing	Screen capture			
7317	✓	✓	✓	✓	✓	✓

**Acquisition+Analyze+Report**

Code	Data acquisition		SPC data analysis	Quality report
	Manual input + Data transmission	File parsing		
7317-A1	✓		✓	✓
7317-A2		✓	✓	✓

**Acquisition+Analyze**

Code	Data acquisition		SPC data analysis
	Manual input + Data transmission	File parsing	
7317-B1	✓		✓
7317-B2		✓	✓

**Acquisition+Report**

Code	Data acquisition		Quality report
	Manual input + Data transmission	File parsing	
7317-C1	✓		✓
7317-C2		✓	✓

**Acquisition**

Code	Data acquisition	
	Manual input + Data transmission	File parsing
7317-D1	✓	
7317-D2		✓

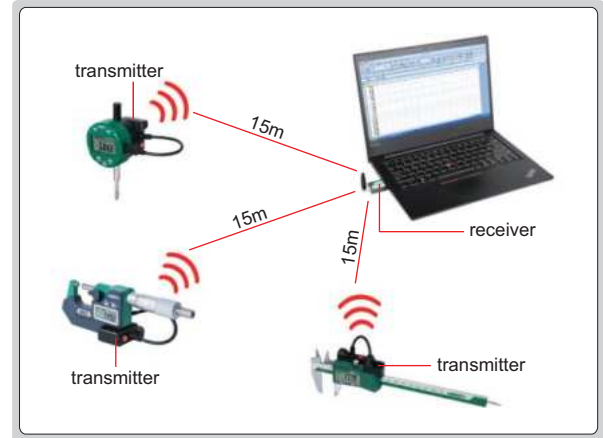
**Panel**

Code	Real-time panel
7317-P	✓

# WIRELESS DATA TRANSMISSION SYSTEM (ZIGBEE)



- Through wireless transmission, the readings of measuring tools can be transmitted to computers or mobile phone
- Wireless zigbee protocol, conforming to IEEE802, 2.4GHz band
- Transmission distance is 15 meter (under the condition of no obstruction and no electromagnetic interference)



## Transmitter

- Connecting to digital measuring tools such as calipers, micrometers and indicators
- CR2032 battery

Code	Description	Transmitter	Connecting with measuring tool	Transmit data
7315-25	transmitter for digital calipers			<ul style="list-style-type: none"> <li>▪ Press the button of the transmitter</li> <li>▪ Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-22	transmitter for large digital calipers			<ul style="list-style-type: none"> <li>▪ Press the button of the transmitter</li> <li>▪ Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-30	transmitter for digital micrometers		 for 3102, 3128, 3565 series digital micrometers	<ul style="list-style-type: none"> <li>▪ Press the "data" button of digital micrometer, can also press the button of the transmitter</li> <li>▪ Data is transmitted once, the signal light of the transmitter flashes once, at the same time, the signal light on the digital micrometer flashes once</li> </ul>

To be continued

Continued from previous page

Code	Description	Transmitter	Connecting with measuring tool	Transmit data
7315-31	transmitter for digital micrometers			<ul style="list-style-type: none"> <li>Press the "data" button of digital micrometer</li> <li>Data is transmitted once, the signal light on the digital micrometer flashes once</li> </ul>
7315-50M	transmitter for digital indicators			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-51	transmitter for digital indicators			<ul style="list-style-type: none"> <li>Press the "DATA" button of digital indicator, can also press the button of the transmitter</li> <li>Transmitter button can be fixed on request</li> <li>Data is transmitted once, the signal light on digital indicator flashes once</li> </ul>

To be continued

Continued from previous page

Code	Description	Transmitter	Connecting with measuring tool	Transmit data
7315-51B	transmitter for bore gauges			<ul style="list-style-type: none"> <li>Press the "DATA" button of digital indicator, can also press the button of the transmitter</li> <li>Data is transmitted once, the signal light on digital indicator flashes once</li> </ul>
7315-2183	transmitter for digital indicators			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-60	transmitter for high precision digital indicators			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-80	transmitter for digital calipers/micrometers			<ul style="list-style-type: none"> <li>Press the "SET" button of the calipers/micrometers, can also press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-3350	transmitter for digital micrometers			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-1150	transmitter for digital height gauges			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>

To be continued

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Code	Description	Transmitter	Connecting with measuring tool	Transmit data
7315-1151	transmitter for digital height gauges			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-2172	transmitter for digital protractors			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-2771	transmitter for digital protractors			<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-8001	transmitter for electronic balances		  for 8001-6D, 8001-15D, 8001-30D series weighing scales and 8501 series platform scales	<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7315-8301	transmitter for electronic balances		 	<ul style="list-style-type: none"> <li>Press the “<math>\mu</math>” button of the electronic balances, can also press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>






To be continued



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### Receiver (keyboard signal)

- For computers and mobile phones
- Recognized as HID keyboard device, the transmitted data is recognized by computers or mobile phones as keyboard input data and press enter key, such as 12.34↵. No need to install drivers and softwares
- Data can be transmitted to excel, word, txt etc.
- For any softwares which can receive keyboard signal

Code	Product	Description	Remark
7315-3	 <p>USB port</p>	single channel receiver	connected with 1 transmitter only
7315-6	 <p>USB port</p>	multichannel receiver	connected with 6 transmitters, each channel has status indicator
7315-7	 <p>type-C port</p>		
7315-8	 <p>micro USB port</p>		
7315-9	 <p>lightning port</p>		

### Receiver (text format, virtual com port)

- For computers with windows system
- Text format virtual com port, converted to keyboard format with supplied software
- Supplied with Excel directional input software
- Measurement data can be transmitted to excel, word, txt etc. and any software which receives keyboard signal


Code	Product	Description	Remark
7315-2	 <p>USB port</p> <p>antenna</p>	multichannel receiver	connected with maximum 16 transmitters, each of them has unique identification code

To be continued

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### Receiver (485 communication)

- Modbus-RTU protocols , baud rate 9600
- Can be connected to a PC or PLC
- The communication address is configurable

Code	Product	Description	Remark
7315-485		multichannel receiver	connected with 6 transmitters, each channel has status indicator

### Excel directional input software

- Supplied with 7315-2 receiver
- The readings of measuring tools can be transmitted to the designated area of excel, which facilitates data management and improves efficiency

Excel directional input software (included in 7315-2), application example 1

Set the display area of caliper at B4-B9, the readings of caliper are displayed at B4, B5...B9.  
 Set the display area of micrometer at C4-C9, the readings of micrometer are displayed at C4, C5... C9.  
 Set the display area of height gauge at D4-D9, the readings of height gauge are displayed at D4, D5... D9.

	A	B	C	D
1	Project	Length	Width	Height
2	Dimension and Tolerance	50±0.05	24±0.01	10+0.05/-0.06
3	Measuring tool	Caliper	Micrometer	Height gage
4	1	50.02	24.004	9.98
5	2	50.01	24.010	10.01
6	3	49.99	23.990	10.02
7	4	50.00	23.996	9.99
8	5	50.04	24.000	10.01
9	6	Channel 1	Channel 2	Channel 3

serial of workpieces      the next data display area is indicated in green

Excel directional input software (included in 7315-2), application example 2

Set the display area of micrometer at B4-C9, data input is from the left to the right, the readings of micrometer are displayed at B4, C4, B5, C5... B9, C9.  
 Set the display area of caliper at D4-E9, the readings of caliper are displayed at D4, E5... D9.  
 Set the display area of depth gauge at E4-E9, the readings of depth gauge are displayed at E4, E5... E9.

	A	B	C	D	E
1	Project	External diameter1	External diameter2	Length	Depth
2	Dimension and Tolerance	Φ23+0.01/-0.02	Φ21+0.01/-0.02	50±0.04	28±0.05
3	Measuring tool	Micrometer	Micrometer	Caliper	Depth gage
4	1	23.010	21.008	49.98	28.01
5	2	23.010	21.000	49.98	27.98
6	3	22.999	21.000	50	28
7	4	23.007	20.998	50	28
8	5	23.000	20.985	50.01	28.01
9	6	23.008	Channel 1	Channel 2	Channel 3

serial of workpieces      the next data display area is indicated in green

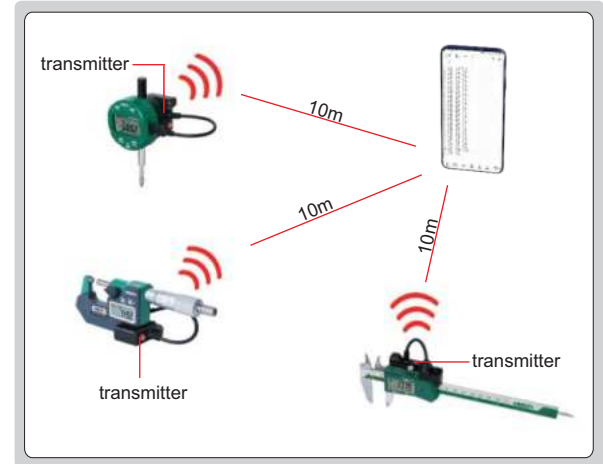
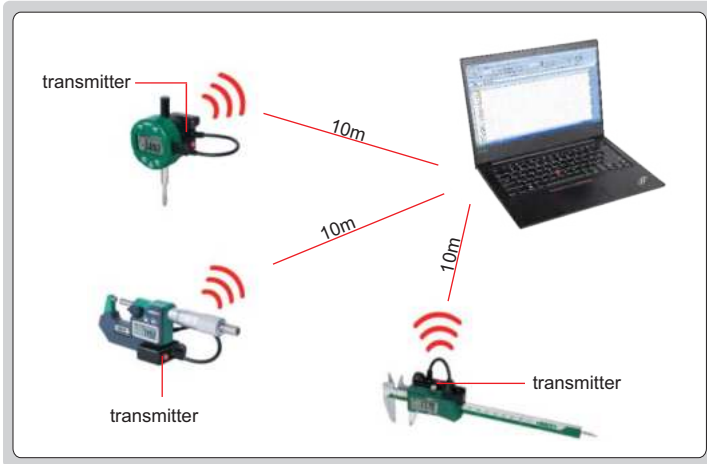
## BLUETOOTH TRANSMITTERS



- Through bluetooth transmission, the readings of measuring tools can be transmitted to computers or mobile phones
- 2.4GHz band
- Recognized as HID keyboard device, the transmitted data is recognized by computers or mobile phones as keyboard input data and press enter key, such as 12.34 ↵
- No need to install drivers and softwares, data can be transmitted to excel, word, txt etc.
- For any softwares which can receive keyboard signal
- Transmission distance is 10 meter (under the condition of no obstruction and no electromagnetic interference)
- Connecting to digital measuring tools such as calipers, micrometers and indicators
- CR2032 battery

connecting with computer

connecting with mobile phone



Code	Description	Transmitter	Connecting with measuring tool	Transmit data
7214-25	transmitter for digital calipers			<ul style="list-style-type: none"> <li>■ Press the button of the transmitter</li> <li>■ Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7214-22	transmitter for large digital calipers			<ul style="list-style-type: none"> <li>■ Press the button of the transmitter</li> <li>■ Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7214-30	transmitter for digital micrometers		 for 3102, 3128, 3565 series digital micrometers	<ul style="list-style-type: none"> <li>■ Press the "data" button of the digital micrometer, can also press the button of the transmitter</li> <li>■ Data is transmitted once, the signal light of the transmitter flashes once, at the same time, the signal light on the digital micrometer flashes once</li> </ul>

To be continued

Continued from previous page

Code	Description	Transmitter	Connecting with measuring tool	Transmit data
7214-31	transmitter for digital micrometers		<p>“data” button</p> <p>signal light</p> <p>back</p>	<ul style="list-style-type: none"> <li>Press the “data” button of digital micrometer</li> <li>Data is transmitted once, the signal light on the digital micrometer flashes once</li> </ul>
7214-50M	transmitter for digital indicators	<p>button</p> <p>signal light</p>	<p>signal light</p> <p>button</p> <p>for digital indicators without data button</p>	<ul style="list-style-type: none"> <li>Press the button of the transmitter</li> <li>Data is transmitted once, the signal light of the transmitter flashes once</li> </ul>
7214-51	transmitter for digital indicators	<p>signal light</p> <p>button</p>	<p>“DATA” button</p> <p>signal light</p> <p>button</p> <p>for digital indicators with data button</p> <p>signal light</p> <p>foot switch (code 7304-7, optional)</p> <p>back</p>	<ul style="list-style-type: none"> <li>Press the “DATA” button of digital indicator, can also press the button of the transmitter</li> <li>Transmitter button can be fixed on request</li> <li>Data is transmitted once, the signal light on digital indicator flashes once</li> </ul>
7214-51B	transmitter for bore gauges	<p>signal light</p> <p>button</p>	<p>“DATA” button</p> <p>signal light</p> <p>button</p> <p>for bore gauges with data button</p>	<ul style="list-style-type: none"> <li>Press the “DATA” button of digital indicator, can also press the button of the transmitter</li> <li>Data is transmitted once, the signal light on digital indicator flashes once</li> </ul>

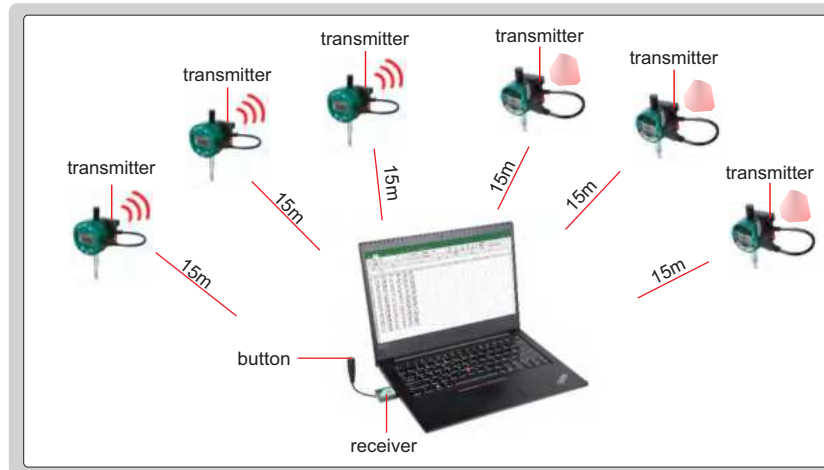
# WIRELESS DATA TRANSMISSION SYSTEM OF DIGITAL INDICATORS (REMOTE CONTROL)



- The readings of digital indicators can be transmitted to computers or mobile phones
- Data acquisition can be remotely controlled through the receiver
- Wireless zigbee protocol, conforming to IEEE802, 2.4GHz band
- Transmission distance is 15 meter (under the condition of no obstruction and no electromagnetic interference)

transmission method: the button on receiver is pressed once, the readings of all digital indicators are transmitted

	channel 1	channel 2	channel 3	channel 4	channel 5	channel 6
	A	B	C	D	E	F
1	24.35	0.4045	57.72	1.949	0.4075	0.03568
2	24.45	0.5045	57.82	2.049	0.5075	0.13568
3	26.35	0.4045	57.72	1.949	0.4075	0.00078
4	27.35	0.4045	57.72	1.7575	0.4075	0.0762
5	28.35	0.4045	57.72	1.7575	0.4075	0.0762
6	29.35	0.4045	57.72	1.7575	0.4075	0.07618
7	30.35	0.4045	57.72	1.7575	0.4075	0.55334
8	31.35	0.4045	57.72	1.7575	0.4075	0.61198
9	24.35	0.4045	57.72	1.7575	0.4075	0.6172



## Transmitter

- Suitable for digital indicators
- CR2032 battery
- 80 hours of operation on a single battery in measurement mode

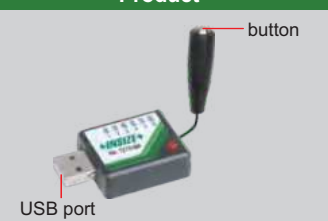
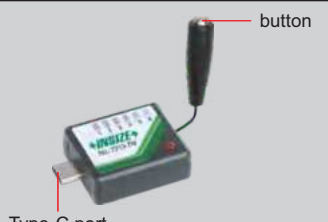

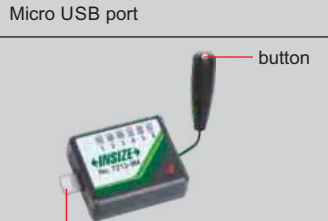
Code	Transmitter	Connecting with digital indicators	Transmit data
7213-56			<ul style="list-style-type: none"> <li>▪ Press and hold the button to enter the measurement mode</li> <li>▪ Press the receiver button in measurement mode to acquire data</li> </ul>

To be continued

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### Receiver (keyboard signal)

- For computers and mobile phones
- Recognized as HID keyboard device, the transmitted data is recognized by computers or mobile phones as keyboard input data and press enter key, such as 12.34€.
- No need to install drivers and softwares
- Data can be transmitted to excel, word, txt etc.
- Suitable for any softwares which can receive keyboard signal

Code	Product	Description	Remark	Transmit data
7213-6M		multichannel receiver	connected with 6 transmitter, each channel has status indicator	<ul style="list-style-type: none"> <li>▪ Press the button of the receiver</li> <li>▪ Data is transmitted once, the signal light of the receiver flashes once</li> </ul>
7213-7M				
7213-8M				
7213-9M				

hand switch, code **7213-SW** (included), length 2m



## COMPARISON TABLE

### ZIGBEE Wireless Transmission

15m

15m

15m

receiver

receiver

receiver

**7315 series**

### Bluetooth Wireless Transmission

Bluetooth connection

10m

Bluetooth connection

10m

Bluetooth connection

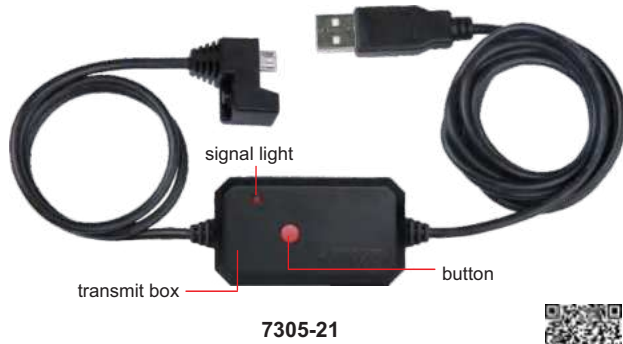
10m

**7214 series**

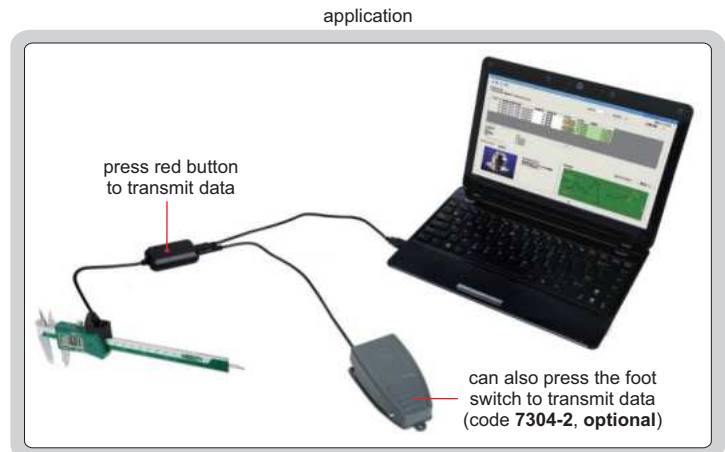
Code	7315 series	7214 series
Function	wireless transmission of measurement data from measuring tools to computers or mobile phones	
Operation system	Windows, Android or iOS	
Wireless module	Zigbee	Bluetooth 5.0
Receiver	need receiver (one receiver can be connected to 16 transmitters)	receiver is not needed, Bluetooth connection (one computer/mobile phone can be connected to 7 transmitters)
Communication type	keyboard format (suitable for any software or APP which can receive keyboard input values)	keyboard format (suitable for any software or APP which can receive keyboard input values)
	text format, virtual com port (a. connect to software which recognizes different channels and IDs according to serial communication protocols and defines data entry area for different measurement tools; b. can also use the software (included in the <b>7315-2</b> receiver) to transmit measurement data from multiple measuring tools to the designated area in Excel for easy data management)	
Acquisition method	press-button single transmission	
Transmission performance	transmission performance with low power consumption, high speed, accurate and stable data, and strong anti-interference performance	transmission performance depends on the Bluetooth performance of computers/mobile phones
Transmission distance	15m	10m
Connection memory	matching operation is not needed after the computer/mobile phone is turned off and on again	need to press the button to match after the computer/mobile phone is turned off and on again

## DATA OUTPUT CABLES (TEXT FORMAT, VIRTUAL COM PORT)

### 1) Data output cables with transmit box


**7305-21**

Single transmit (can be switched to continuous transmit)











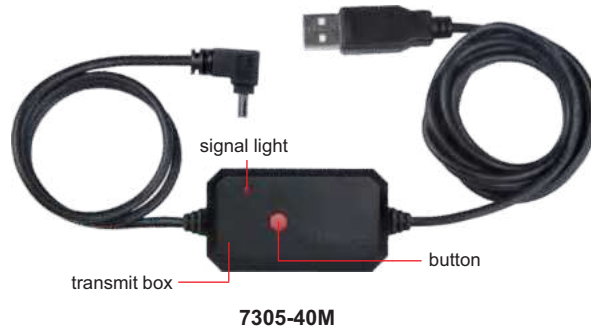
Code	Description	Plug to measuring tool	Plug to computer	Connecting with measuring tool	Transmit data
7305-21	cable for digital calipers (length 3m)				<ul style="list-style-type: none"> <li>Press the button on the plug of cable, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R21					
7305-22	cable for large digital calipers (length 2.5m)				<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R22					
7305-30	cable for digital micrometers (length 2.5m)			 back	<ul style="list-style-type: none"> <li>Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once</li> </ul>
7305-R30					
7305-31	cable for digital micrometers (length 2.5m)			 IP65 back	<ul style="list-style-type: none"> <li>Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once</li> </ul>
7305-R31					

To be continued







Continued from previous page

Code	Description	Plug to measuring tool	Plug to computer	Connecting with measuring tool	Transmit data
7305-50M	cable for digital gauges (length 2.5m)				<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R50M					
7305-1150	cable for digital height gauges (length 2.5m)				<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R1150					



**Continuous transmit (can be switched to single transmit)**

Code	Description	Plug to measuring tool	Plug to computer	Connecting with measuring tool	Transmit data
7305-40M	cable for digital indicators (length 2.5m)			 <p>for 2108, 2138, 2139 series digital indicators</p>	<p>Continuous transmit is controlled in software</p> <p>Single transmit:</p> <ul style="list-style-type: none"> <li>Press the "DATA" button of digital indicator, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once</li> </ul> <p>Note: long press button to zero the digital indicators; software of data transmit is included</p>
				 <p>for other digital indicators</p>	<p>Continuous transmit is controlled in software</p> <p>Single transmit:</p> <ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul> <p>Note: long press button to zero the digital indicators; software of data transmit is included</p>

To be continued

Continued from previous page

Code	Description	Plug to measuring tool	Plug to computer	Connecting with measuring tool	Transmit data
7305-R40M	cable for digital indicators (length 2.5m)			<p>for 2108, 2138, 2139 series digital indicators</p>	<p>Continuous transmit is controlled in software</p> <p>Single transmit:</p> <ul style="list-style-type: none"> <li>Press the "DATA" button of digital indicator, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once</li> </ul> <p>Note: long press button to zero the digital indicators; software of data transmit is included</p>
				<p>for other digital indicators</p>	<p>Continuous transmit is controlled in software</p> <p>Single transmit:</p> <ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul> <p>Note: long press button to zero the digital indicators; software of data transmit is included</p>

**Software (included in 7305-40M and 7305-R40M)**

- Real-time display
- Tolerance setting, automatic judgment, out-of-tolerance alarm
- Real time statistics: max, min, average, Go/No-Go number
- Can save results as Excel

export Excel

real-time display

setting zero of digital indicators

measurement results and judgment

setting tolerance and sampling period

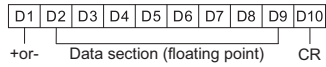
To be continued

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communication protocol

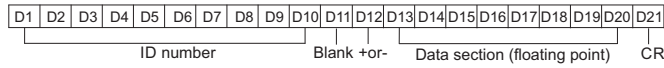
- Baud: 9600bps  
Data bit: 8  
Stop bit 1  
Check bit: None  
No flow control

▪ Data output format



Display	Output
1.234	➔ +0001.234 ✓
-1.234	➔ -0001.234 ✓

▪ Data output format with ID number



Display	Output
1.234	➔ 4109210605 +0001.234 ✓
-1.234	➔ 4109210605 -0001.234 ✓

- The data transmission mode can be switched: single or continuous;  
The data output format can be switched: with ID number or without ID number;  
Data can be transmitted by command;  
The digital indicators can be zeroed by command

▪ Pin definition of RS232C plug:



Pin No.	Symbol	Description
2	TXD	Data OUT
3	RXD	Data IN
4	VDD	+5V Power
5	GND	Ground

## 2) Data output cables without transmit box



7305-G3350

application



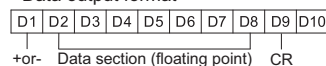
### Single transmit

Code	Description	Plug to measuring tool	Plug to computer	Connecting with measuring tool	Transmit data
7305-G60	cable for high precision digital indicators (length 3m)				<ul style="list-style-type: none"> <li>▪ Press the "DATA" button of high precision digital indicator</li> </ul>
7305-G3350	cable for digital micrometers (length 3m)				<ul style="list-style-type: none"> <li>▪ Press the "DATA" button of digital micrometer</li> </ul>

communication protocol

- Baud: 9600bps  
Data bit: 8  
Stop bit 1  
Check bit: None  
No flow control

▪ Data output format

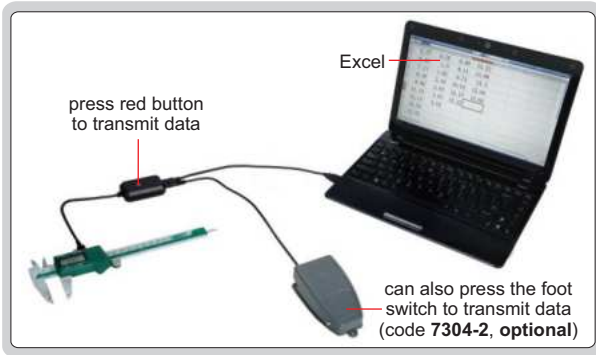


Display	Output
1.234	➔ +0001.234 ✓
-1.234	➔ -0001.234 ✓

- Data can be transmitted by command  
The digital indicators or micrometers can be zeroed by command

## DATA OUTPUT CABLES (KEYBOARD FORMAT)

application



7302-21














- Recognized as HID keyboard device by computer, no need to install drivers and softwares
- Data can be transmitted to Excel, Word, txt and other files (press transmit button, which is recognized by the computer as keyboard input data and press enter key, such as 12.34)
- For any softwares which can receive keyboard signal
- Optional accessory: foot switch (code: **7304-2**), hub (code: **7324-HUB4**, **7324-HUB7**), extension cables (code: **7325-ADD5**, **7325-ADD10**)

Code	Description	Plug	Connecting with measuring tool	Transmit data
7302-21	cable for digital calipers (length 3m)			<ul style="list-style-type: none"> <li>▪ Press the button on the plug of cable, can also press the button of the transmit box, or press the foot switch</li> <li>▪ Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7302-22	cable for large digital calipers (length 2.5m)			<ul style="list-style-type: none"> <li>▪ Press the button of the transmit box, or press the foot switch</li> <li>▪ Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7302-30	cable for digital micrometers (length 2.5m)		  for 3102, 3128, 3565 series digital micrometers	<ul style="list-style-type: none"> <li>▪ Press the "data" button of digital micrometer, can also press the button of the box, or press the foot switch</li> <li>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once</li> </ul>
7302-31	cable for digital micrometers (length 2.5m)		 	<ul style="list-style-type: none"> <li>▪ Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch</li> <li>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once</li> </ul>














To be continued

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Code	Description	Plug	Connecting with measuring tool	Transmit data
7302-50M	cable for digital gauges (length 2.5m)			<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7302-40M	cable for digital indicators (length 2.5m)		 <p>“DATA” button signal light</p> <p>for 2108, 2138, 2139 series digital indicators</p>	<ul style="list-style-type: none"> <li>Press the “DATA” button of digital indicator, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once</li> </ul> <p>Note: long press button to zero the digital indicators</p>
			 <p>for other digital indicators</p>	<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul> <p>Note: long press button to zero the digital indicators</p>
7302-60	cable for high precision digital indicators (length 2.5m)		 <p>“DATA” button</p>	<ul style="list-style-type: none"> <li>Press the “DATA” button of high precision digital indicator, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7302-3350	cable for digital micrometers (length 2.5m)		 <p>“DATA” button</p>	<ul style="list-style-type: none"> <li>Press the “DATA” button of digital micrometer, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7302-1151	cable for digital height gauges (length 2.5m)			<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>

To be continued

Continued from previous page

Code	Description	Plug	Connecting with measuring tool	Transmit data
7302-SPC7	cable for digital height gauges (length 2.5m)			<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7302-8001	cable for weighing scales (length 2.5m)		 <p>back</p> <p>“” button</p> <p>for <b>8301</b> and <b>8305</b> series electronic balances</p>	<ul style="list-style-type: none"> <li>Press the “” button of electronic balance, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
			 <p>back</p> <p>for <b>8001-6D</b>, <b>8001-15D</b>, <b>8001-30D</b> series weighing scales and <b>8501</b> series platform scales</p>	
7302-8304	cable for electronic balances (length 3m)		 <p>back</p> <p>“” button</p>	<ul style="list-style-type: none"> <li>Press the “” button of electronic balance, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7302-LDM	cable for laser scan micrometers (length 3m)			<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>

## 485 DATA OUTPUT CABLES

- Modbus-RTU protocols
- Can be connected to a PC or PLC
- The baud rate is configurable (9600, 19200, 38400)
- The communication address is configurable



7215-50M

Code	Description	Plug	Connecting with measuring tool	Transmit data
7215-21	cable for digital calipers (length 3m)			<ul style="list-style-type: none"> <li>▪ Acquiring data through host computers</li> </ul>
7215-22	cable for digital calipers (length 2.5m)			<ul style="list-style-type: none"> <li>▪ Acquiring data through host computers</li> </ul>
7215-30	cable for digital micrometers (length 2.5m)		 for 3102, 3128, 3565 series digital micrometers back	<ul style="list-style-type: none"> <li>▪ Acquiring data through host computers</li> </ul>
7215-31	cable for digital micrometers (length 2.5m)		 IP65 back	<ul style="list-style-type: none"> <li>▪ Acquiring data through host computers</li> </ul>
7215-40M	cable for digital indicators (length 2.5m)			<ul style="list-style-type: none"> <li>▪ Acquiring data through host computers</li> </ul>
7215-50M	cable for digital gauges (length 2.5m)			<ul style="list-style-type: none"> <li>▪ Acquiring data through host computers</li> </ul>

# INTERFACE BOX AND DATA OUTPUT CABLES



**8-channel interface box  
7210-2**



**data output cable  
7305-R40M**

application



- The interface box can be connected to digital measuring tools, such as calipers, micrometers, indicators (7305-R series data output cables are needed)
- The interface box is supplied with Excel directional input software
- The interface box can be connected with 8 data output cables, each of them has unique identification code

### INTERFACE BOX SPECIFICATION

<b>Code</b>	<b>7210-2</b>
<b>Quantity of digital measuring tools to be connected</b>	8 pcs
<b>Output port</b>	USB (virtual serial signal)

### Excel directional input software

- Supplied with 7210-2 interface box
- The measurement data of multiple measuring tools can be transmitted to the designated area of Excel, which is convenient for data management and improves efficiency

excel directional input software application example 1

Set the display area of caliper at B4-B9, the readings of caliper are displayed at B4, B5...B9. Set the display area of micrometer at C4-C9, the readings of micrometer are displayed at C4, C5... C9. Set the display area of height gauge at D4-D9, the readings of height gauge are displayed at D4, D5... D9.

	A	B	C	D
1	Project	Length	Width	Height
2	Dimension and Tolerance	50±0.05	24±0.01	10+0.05/-0.06
3	Measuring tool	Caliper	Micrometer	Height gage
4	1	50.02	24.004	9.98
5	2	50.01	24.010	10.01
6	3	49.99	23.990	10.02
7	4	50.00	23.996	9.99
8	5	50.04	24.000	10.01
9	6	Channel 1	Channel 2	Channel 3

serial of workpieces      the next data display area is indicated in green

excel directional input software application example 2

Set the display area of micrometer at B4-C9, data input is from the left to the right, the readings of micrometer are displayed at B4, C4, B5, C5... B9, C9. Set the display area of caliper at D4-D9, the readings of caliper are displayed at D4, D5... D9. Set the display area of depth gauge at E4-E9, the readings of depth gauge are displayed at E4, E5... E9.

	A	B	C	D	E
1	Project	External diameter1	External diameter2	Length	Depth
2	Dimension and Tolerance	Φ23+0.01/-0.02	Φ21+0.01/-0.02	50±0.04	28±0.05
3	Measuring tool	Micrometer	Micrometer	Caliper	Depth gage
4	1	23.010	21.008	49.98	28.01
5	2	23.010	21.000	49.98	27.98
6	3	22.999	21.000	50	28
7	4	23.007	20.998	50	28
8	5	23.000	20.985	50.01	28.01
9	6	23.008	Channel 1	Channel 2	Channel 3

serial of workpieces      the next data display area is indicated in green

To be continued



Continued from previous page

**DATA OUTPUT CABLE SPECIFICATION**

Code	Description	Plug to measuring tool	Connecting with measuring tool	Transmit data
7305-R21	cable for digital calipers (length 3m)			<ul style="list-style-type: none"> <li>Press the button on the plug of cable, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R22	cable for large digital calipers (length 2.5m)			<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R30	cable for digital micrometers (length 2.5m)			<ul style="list-style-type: none"> <li>Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once</li> </ul>
7305-R40M	cable for digital indicators (length 2.5m)		<p>suitable for 2108, 2138, 2139 series digital indicators</p>	<ul style="list-style-type: none"> <li>Press the "DATA" button of digital indicator, can also press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once</li> </ul>
			<p>suitable for other digital indicators</p>	<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R50M	cable for digital gauges (length 2.5m)			<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>
7305-R1150	cable for digital height gauges (length 2.5m)			<ul style="list-style-type: none"> <li>Press the button of the transmit box, or press the foot switch</li> <li>Data is transmitted once, the signal light of the transmit box flashes once</li> </ul>

connected with digital indicator



## DISPLAY UNIT CODE 7106-1A

REFER TO PAGE 563  
FOR DETAILS

connected with digital indicators



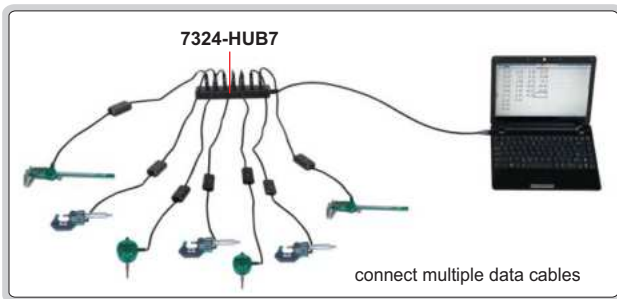
## MULTICHANNEL INTERFACE BOXES

REFER TO PAGE 564  
FOR DETAILS



7107-1

application



## HUBS



7324-HUB4



7324-HUB7

adapter (optional)



7324-ADAPTER

- Suitable for USB plug data cable



7324-HUB16

Code	Description	Applicable products	Note
7324-HUB4	4-channel hub (length 0.2m, USB computer plug)	7302 series data cables (USB plug) 7305 series data cables (USB plug)	no adapter required
7324-HUB7	7-channel hub (length 1m, USB computer plug)		optional: adapter (code: 7324-ADAPTER) note: adapter required for connecting high power devices
7324-HUB16	16-channel hub (length 1m, USB computer plug)		adapter is included

## EXTENSION CABLES

Code	Description	Applicable products
7325-ADD5	data extension cable (length 5m, USB plug)	7302 series data cables
7325-ADD10	data extension cable (length 10m, USB plug)	7305 series data cables (USB plug)



7325-ADD5

application



## FOOT SWITCH



7304-2

- For data transmission

Code	Description	Applicable products
7304-2	data transmission foot switch with cable (length 2m)	7302 series data cables 7305 series data cables

application



## OK/NG INPUT SWITCHES



7327-FS



7327-SW

- Used with 7317 software, output OK or NG
- USB plug, length 1.5m

Code	Description
7327-FS	foot switch for OK/NG input
7327-SW	hand switch for OK/NG input

application

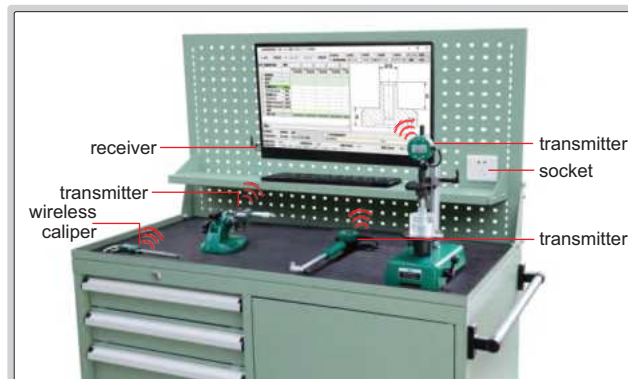


## MOBILE WORKBENCH



7901-10A

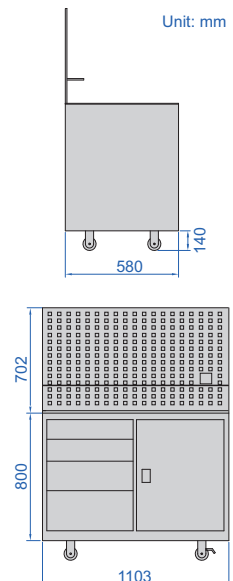
application



- Tabletop can support 50kg

Code	L×W×H (without caster)
7901-10A	1103×580×1502mm

Unit: mm



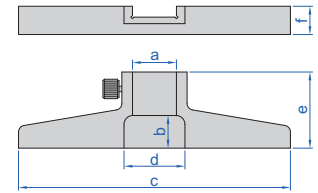
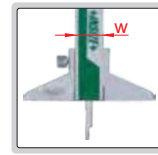
## DEPTH BASE ATTACHMENTS



6140



6140-16B



2

(mm)

Code	a	b	c	d	e	f
6140	16.5	9	75	18	30	6
6140-300A	20	15	125	22	34	9
6140-16B	16	12.5	75	24.5	30	11
6140-300B	20	15	125	28	35	13

- To increase the stability of depth measurement
- Made of stainless steel

### Application

Code	Type	Application
6140	narrow base (f=6mm)	suitable for 1195/1118/1113/1108/1103/1114/1109/1130/1193/1110 series digital calipers with beam width (w) 16mm
6140-300A	narrow base (f=9mm)	suitable for 1196 series digital calipers with beam width (w) 20mm
6140-16B	wide base (f=11mm), high stability	suitable for 1195/1118/1113/1108/1103/1114/1109/1130/1193/1110 series digital calipers and 1312/1311/1339 series dial calipers with beam width (w) 16mm
6140-300B	wide base (f=13), high stability	suitable for 1196 series digital calipers and 1312/1311/1339 series dial calipers with beam width (w) 20mm

## ACCESSORY SET FOR DIGITAL CALIPERS CODE 6144

measuring internal groove diameter (h ≤ 3.5mm)

measuring center distance

spherical points for groove diameter (inside hole) measurement

flat points for external groove diameter measurement

6144

Unit: mm  
disk points (stainless steel)

Unit: mm  
conical points (stainless steel)

Unit: mm  
spherical/flat points (stainless steel)

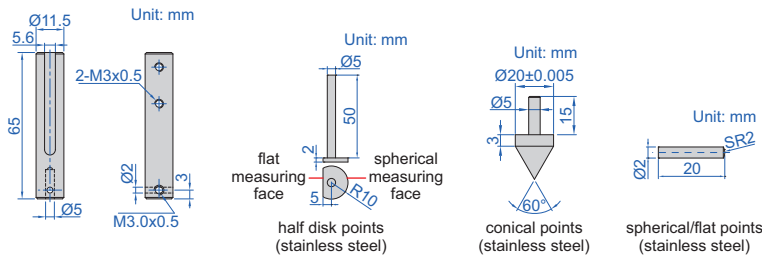
- Suitable for 0-150mm/0-6" and 0-200mm/0-8" digital calipers (thickness of lower jaws ≤ 3.7mm)

Code  
6144

**ACCESSORY SET FOR LARGE DIGITAL CALIPERS  
CODE 6145-500**



6145-500



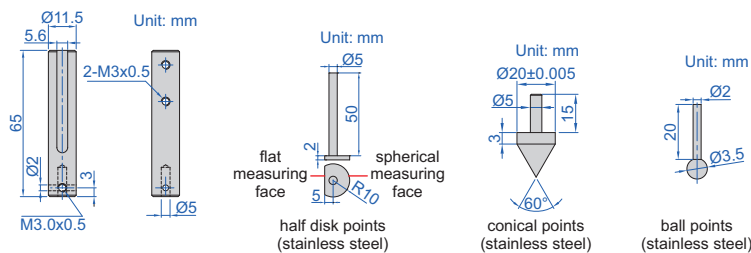
■ Suitable for 0-500mm/0-20" and 0-600mm/0-24" digital calipers (thickness of lower jaws ≤ 5.6mm)

**Code**  
**6145-500**

**ACCESSORY SET FOR LARGE DIGITAL CALIPERS (WITH SIDE POINTS)  
CODE 6146-500B**



6146-500B



■ Suitable for 0-500mm/0-20" and 0-600mm/0-24" digital calipers (thickness of lower jaws ≤ 5.6mm)

**Code**  
**6146-500B**