

DONGDO TECH

**PROBE SENSOR
ELECTRONIC MICROMETER
MEASURING SYSTEM
FOR TOTAL GAUGING APPLICATION**



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Product

Probe Sensor

- Various measuring range
- Excellent resistance to workshop conditions
- High resolution & linearity
- High repeatability, long life cycle



<HBT : $\pm 0.5\text{mm} \sim \pm 12.5\text{mm}$ >

<Digital : 15mm>

E.Micrometer

ML-CP

- Channel : 1~4ch
- 3.5" Color TFT LCD
- Easy operation with touch screen
- Standard, Runout, Air



ML-MP

- Channel : 1~8ch
- 4.2" Color TFT LCD
- Easy operation with touch screen
- Saving data and settings
- Standard, Runout, Air



ML-LP

- Channel : 1~16ch
- 7" Color TFT LCD
- Easy operation with touch screen
- Saving data and settings
- Support user's measuring screen editor
- Standard, Runout, Air, Grade, Force, Digiforce



ML-PBM

- Channel : 1~8ch
- 3.5", 4.2" Color TFT LCD
- Easy operation with touch screen
- Wireless portable(charging battery)
- Standard



E.Micrometer

ML-16PT

- Channel : 1~16ch
- 7" Color TFT LCD
- Easy operation with key pad
- Special program
- Standard



ML-40PT

- Channel : 1~32ch
- 7" Color TFT LCD
- Easy operation with key pad
- Special program
- Standard, Air



CM-1000

- Channel : 1~4ch
- High speed data transmission
- RS232C / RS485 data communication
- Serial command



ML-LPC

- Channel : 1~16ch
- High speed data transmission
- RS232C / RS485 data communication
- Serial command
- I/O interface



ML-32P-CT1

- Channel : 1~32ch
- High speed data transmission
- RS232C / RS485 data communication
- I/O interface



ML-COLUMN

- Channel : 1 ~ 4ch
- Color TFT LCD
- 3color LED bar
- RS232C communication
- Air



DP-S1/S2/S4

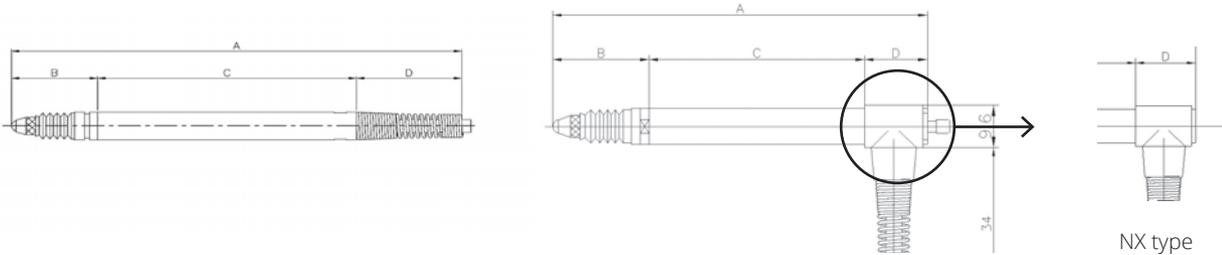
- Various measuring range : $\pm 0.5\text{mm} \sim \pm 2\text{mm}$
- Excellent resistance to workshop conditions
- High resolution & linearity
- High accuracy, long life cycle



● Specification

Model	DP-S1	DP-S1V	DP-S2	DP-S2V	DP-S2VA	DP-S4	DP-S4V	DP-S4VA	DP-S4VAL
Plunger movement by	Spring push		Spring push & Vacuum*		Pneumatic	Spring push	Spring push & Vacuum*	Pneumatic	Pneumatic. Ultra soft touch
Maximum stroke	1.4mm		2.8mm			4.95mm		4.9mm	
Measuring range	$\pm 0.5\text{mm}$		$\pm 1\text{mm}$			$\pm 2\text{mm}$			
Repeatability	$\leq 0.15\mu\text{m}$								
Linearity error	$\leq 4\mu\text{m}$ at $\pm 0.5\text{mm}$		$\leq 1\mu\text{m}$ at $\pm 0.5\text{mm}$ $\leq 4\mu\text{m}$ at $\pm 1.0\text{mm}$			$\leq 2\mu\text{m}$ at $\pm 1.0\text{mm}$ $\leq 20\mu\text{m}$ at $\pm 2.0\text{mm}$			
Air pressure (Force $\pm 25\%$ at electrical zero)	-		-		0.5~1.0 bar	-		0.5~1.0 bar	0.2~0.7 bar
Measuring force ($\pm 25\%$, at electrical zero)	48g		-		Dependent on the air pressure	Natural drop, 4g, 8g, 16g, 48g		Dependent on the air pressure	
Cable length	2m / 3m / 5m / 10m								
External diameter	$\varnothing 8\text{mm}$								
Mass (except cable)	Approx. 11g		Approx. 13g	Approx. 18g	Approx. 11g	Approx. 17g	Approx. 22g	Approx. 22g	Approx. 13g
Operating temp.	0 ~ 50°C								

* Vacuum not used : NX



● Dimensions

Model	DP-S1	DP-S2	DP-S4	DP-S1V	DP-S2V	DP-S2VA	DP-S4V	DP-S4VA	DP-S4VAL
A	67.8	81	111.3	38.9	53.2	58.3	83.5	80.6	78.1
B	13.7	16.4	21.3	13.7	16.4	15	21.5	14	9
C	29	39.5	64	15.5	24	30.5	48	53.8	56.3
D	25.1	25.1	26	9.7	12.8	12.8	14	12.8	12.8

Unit<mm>

● Extension cable

- DEC-03(3m)
- DEC-05(5m)
- DEC-07(7m)



DP-10/15/25

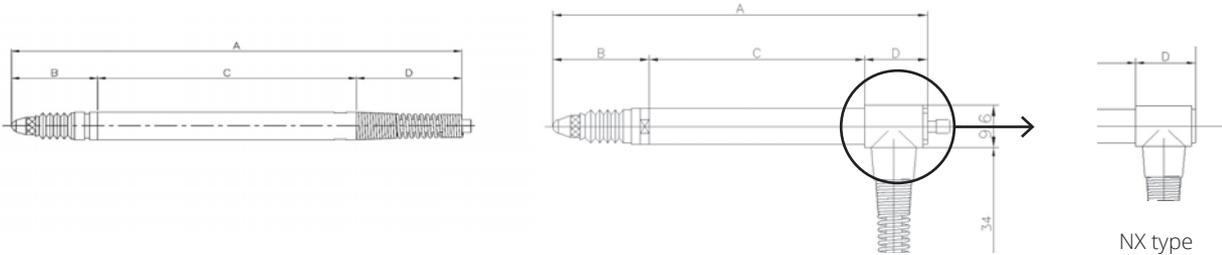
- Various measuring range : $\pm 5\text{mm} \sim \pm 12.5\text{mm}$
- Excellent resistance to workshop conditions
- High resolution & linearity
- High accuracy, long life cycle



● Specification

Model	DP-10	DP-10V	DP-10VA	DP-10VAL	DP-15	DP-15V	DP-25
Plunger movement by	Spring push	Spring push & Vaccum*	Pneumatic	Pneumatic. Ultra soft touch	Spring push	Spring push & Vaccum*	Spring push
Maximum stroke	10.45mm				15.5mm		26mm
Measuring range	$\pm 5\text{mm}$				$\pm 7.5\text{mm}$		$\pm 12.5\text{mm}$
Repeatability	$\leq 0.4\mu\text{m}$				$\leq 0.5\mu\text{m}$		
Linearity error	$\leq 6\mu\text{m}$ at $\pm 3.0\text{mm}$ $\leq 50\mu\text{m}$ at $\pm 5.0\text{mm}$				$\leq 30\mu\text{m}$ at $\pm 5.0\text{mm}$ $\leq 50\mu\text{m}$ at $\pm 5.5\text{mm}$		$\leq 40\mu\text{m}$ at $\pm 8\text{mm}$
Air pressure (Force $\pm 25\%$ at electrical zero)	-		0.5~1.0 bar	0.2~0.7 bar	-		
Measuring force ($\pm 25\%$, at electrical zero)	80g		Dependent on the air pressure		80g		180g
Cable length	3m / 5m / 10m						
External diameter	$\varnothing 8\text{mm}$						$\varnothing 15\text{mm}$
Mass (except cable)	Approx. 20g	Approx. 26g	Approx. 18g		Approx. 25g	Approx. 31g	Approx. 145g
Operating temp.	0 ~ 50°C						

* Vaccum not used : NX



● Dimensions

Model	DP-10	DP-15	DP-10V	DP-10VA	DP-10VAL	DP-15V	DP-25
A	144.2	156	116.7	103.7	102.4	128.8	216.45
B	32.9	40	32.9	19.9	18.6	40	68
C	85.5	91	71	71	71	76	143.5
D	25.8	25	12.8	12.8	12.8	12.8	4.85

Unit<mm>

● Extension cable

- DEC-03(3m)
- DEC-05(5m)
- DEC-07(7m)



DP-S4 / DP-10 mini connector

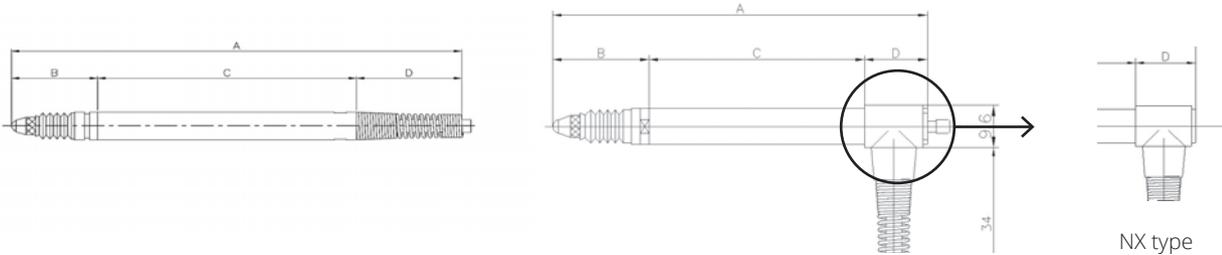
- Various measuring range : $\pm 2\text{mm} \sim \pm 5\text{mm}$
- Excellent resistance to workshop conditions
- High resolution & linearity
- High accuracy, long life cycle
- Easy replacement maintenance



● Specification

Model	DP-S4 (M0.3)	DP-S4V (M0.3)	DP-S4VA (M0.3)	DP-S4VAL (M0.3)	DP-10 (M0.3)	DP-10V (M0.3)	DP-10VA (M0.3)	DP-10VAL (M0.3)
Plunger movement by	Spring push	Spring push & Vacuum*	Pneumatic	Pneumatic. Ultra soft touch	Spring push	Spring push & Vacuum*	Pneumatic	Pneumatic. Ultra soft touch
Maximum stroke	4.95mm		4.9mm		10.45mm			
Measuring range	$\pm 2\text{mm}$				$\pm 5\text{mm}$			
Repeatability	$\leq 0.15\mu\text{m}$				$\leq 0.4\mu\text{m}$			
Linearity error	$\leq 2\mu\text{m}$ at $\pm 1.0\text{mm}$ $\leq 20\mu\text{m}$ at $\pm 2.0\text{mm}$				$\leq 6\mu\text{m}$ at $\pm 3.0\text{mm}$ $\leq 50\mu\text{m}$ at $\pm 5.0\text{mm}$			
Air pressure (Force $\pm 25\%$ at electrical zero)	-		0.5~1.0 bar	0.2~0.7 bar	-		0.5~1.0 bar	0.2~0.7 bar
Measuring force ($\pm 25\%$, at electrical zero)	Natural drop, 4g, 8g, 16g, 48g		Dependent on the air pressure		80g		Dependent on the air pressure	
Cable length	0.3m / with DECM-025(2.5m), DECM-05(5m)							
External diameter	$\varnothing 8\text{mm}$							
Mass (except cable)	Approx. 17g	Approx. 22g	Approx. 22g	Approx. 13g	Approx. 20g	Approx. 26g	Approx. 18g	
Operating temp.	0 ~ 50°C							

* Vacuum not used : NX



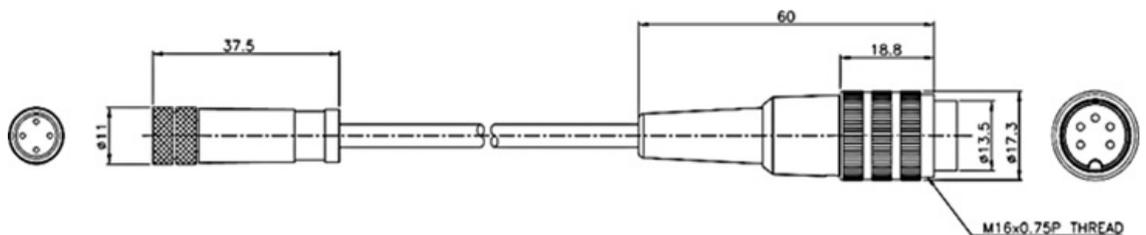
● Dimensions

Model	DP-S4 (M0.3)	DP-10 (M0.3)	DP-S4V (M0.3)	DP-S4VA (M0.3)	DP-S4VAL (M0.3)	DP-10V (M0.3)	DP-10VA (M0.3)	DP-10VAL (M0.3)
A	111.3	144.2	83.5	80.6	78.1	116.7	103.7	102.4
B	21.3	32.9	21.5	14	9	32.9	19.9	18.6
C	64	85.5	48	53.8	56.3	71	71	71
D	26	25.8	14	12.8	12.8	12.8	12.8	12.8

Unit<mm>

● Extension cable

- DECM-025(2.5m)
- DECM-05(5m)



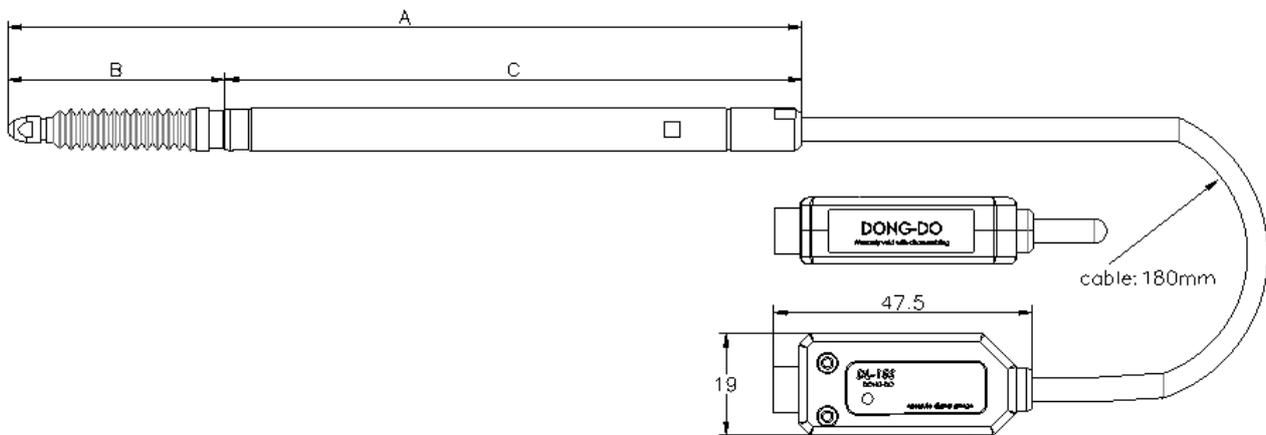
DL-15S

- Absolute digital linear gauge
- Measuring range : 15mm
- Resolution : 0.1um
- Accuracy : ±1um
- Compact size : ø8 pencil type
- Excellent resistance to workshop conditions
- Various & multi channel applications



● Specification

Model	DL-15S
Method	Optical absolute linear encoder
Measuring range	15mm
Resolution	0.1um
Accuracy	±1um
Measuring force	80g
Mounting stem diameter	ø8mm
Operating temp.	0 ~ 50°C
Protection rating	IP64
Cable length	2m / 5m / 10m
Mass(except cable)	Approx. 45g



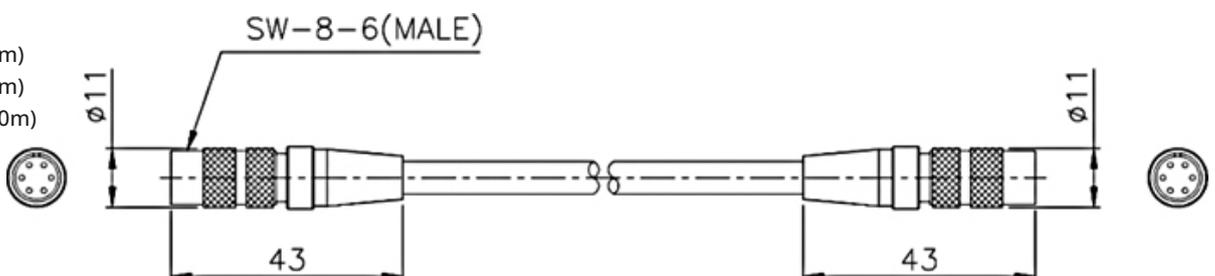
● Dimensions

Model	DL-15S
A	146.5
B	40
C	106.5

Unit<mm>

● Direct cable

- DLDSC-02 (2m)
- DLDSC-05 (5m)
- DLDSC-10 (10m)



ML-CP

- Channel : 1~4ch
- 3.5" Color TFT LCD
- Easy operation with touch screen
- Histogram display
- Various calculation modes
- RS232C / RS485 communication
- I/O interface

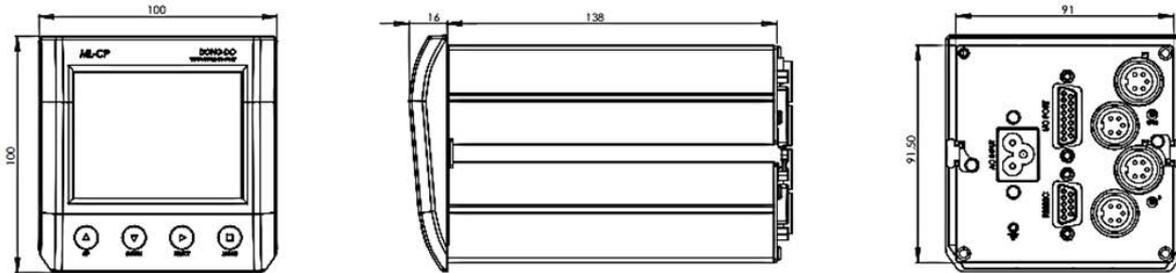


● Specification

Model	ML-CP-S	ML-CP-R	ML-CPD	ML-CP2-S	ML-CP-A	ML-CP-F
Display	3.5" TFT color LCD with touch screen					
Resolution	0.001mm / 0.01mm (Option: 0.0001mm)				0.0001mm	Dependent on Load cell
Input channels	1Ch ~ 4Ch				Air 1Ch ~ 2Ch	Load cell 1Ch
Size(mm) W x H x D (Panel hole W x H)	99.5 x 99.5 x 153.5 (93 x 93)					
Power input	AC100~220V 50Hz/60Hz		DC 24V	AC100~220V 50Hz/60Hz		
Calculation modes	Peak, Off-peak, Maximum, Minimum, Max-min, Average, Sum, Diameter(3point), Plus, Minus, Absolute value... etc.					
Data communication	RS232C (Option: RS485)					
Serial command	CLEAR , ZERO , RESET , START , RECALL					
I/O Port	15PIN : 6 Inputs(START,ZERO,MODEL BIT,etc) / 6 Outputs(OK,NG,READY,etc)					
Data storage	-					
Available probes*	Analog(HBT / LVDT)			Digital(DL)	Air	Load cell

*On inquiry(other makers)

● Dimensions



● Order code

ML-CP-	S	2	-	R		-	X	1		
1	2	3		4	5		6	7	8	9

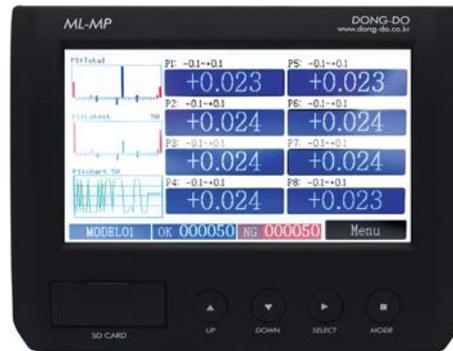
1	ML-CP-	
	ML-CP2-	
	ML-CPD-	
2	S	General/Statistical
	R	Runout
	F	Force/Weight
	A	Air Gauge
3	1~4	channels
4	R	9600~115200bps, N81
	RS	RS485
5		standard
	A	Special or 16bit

6	A	4mm
	B	10mm
	C	25mm
	D	RDP, ACT1000A
	E	RDP, ACT2000A
	F	special
	G	Magnescape
	H	Heidenhain
	M	Marposs
	S	Solartron
	X	15mm
DL	DL series	

7	1	Resolution : 1um
	2	2um
	3	0.1um
	4	0.5um
	5	by Probe and ADC
	6	special
8		standard
	S	special

ML-MP

- Channel : 1~8ch
- 4.2" Color TFT LCD
- Easy operation with touch screen
- Histogram display
- Saving data and settings
- Various calculation modes
- RS232C / RS485 communication
- I/O interface

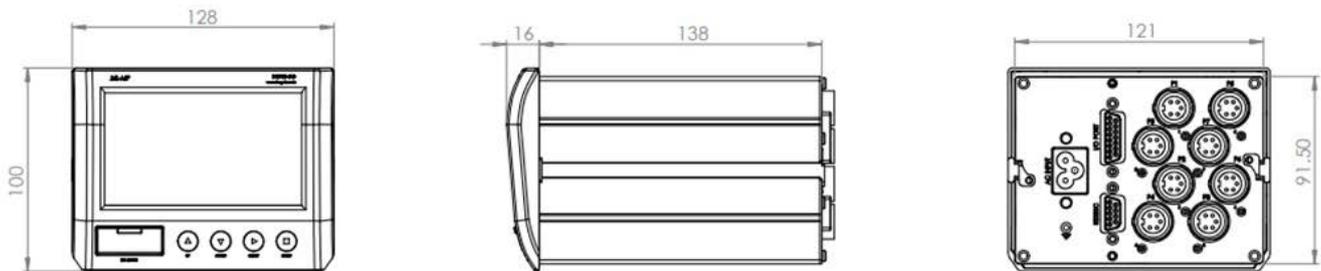


● Specification

Model	ML-MP-S	ML-MP-R	ML-MPD	ML-MP2-S	ML-MP-A
Display	4.2" TFT color LCD with touch screen				
Resolution	0.001mm / 0.01mm (Option: 0.0001mm)				0.0001mm
Input channels	1Ch ~ 8Ch	1Ch ~ 6Ch	1Ch ~ 8Ch		Air 1Ch ~ 4Ch
Size(mm) W x H x D (Panel hole W x H)	128 x 100 x 154 (123 x 93)				
Power input	AC100~220V 50Hz/60Hz		DC 24V	AC100~220V 50Hz/60Hz	
Calculation modes	Peak, Off-peak, Maximum, Minimum, Max-min, Average, Sum, Diameter(3point), Plus, Minus, Absolute value... etc.				
Data communication	RS232C (Option: RS485)				
Serial command	CLEAR, ZERO, RESET, START, RECALL				
I/O Port	15PIN : 6 Inputs(START,ZERO,MODEL BIT,etc) / 6 Outputs(OK,NG,READY,etc)				
Data storage	SD card				
Available probes*	Analog(HBT / LVDT)		Digital(DL)		Air

*On inquiry(other makers)

● Dimensions



● Order code

ML-MP-	R	1	-	R		-	A	1		
1	2	3		4	5		6	7	8	9

1	ML-MP-	
	ML-MP2-	
	ML-MPD-	
2	S	General/Statistical
	R	Runout
	A	Air Gauge
3	1~8	channels
4	R	9600~115200bps, N81
	RS	RS485
5		standard
	A	Special or 16bit
6	A	4mm

6	B	10mm
	C	25mm
	D	RDP, ACT1000A
	E	RDP, ACT2000A
	F	special
	G	Magnescale
	H	Heidenhain
	M	Marposs
	S	Solartron
	X	15mm
7	DL	DL series
	1	Resolution : 1um

7	2	2um
	3	0.1um
	4	0.5um
	5	by Probe and ADC
	6	special
8		standard
	S	special

ML-LP

- Channel : 1~16ch
- 7" Color TFT LCD
- Easy operation with touch screen
- Histogram display
- Saving data and settings
- Support user's measuring screen editor
- Various calculation modes
- RS232C / RS485 communication
- I/O interface

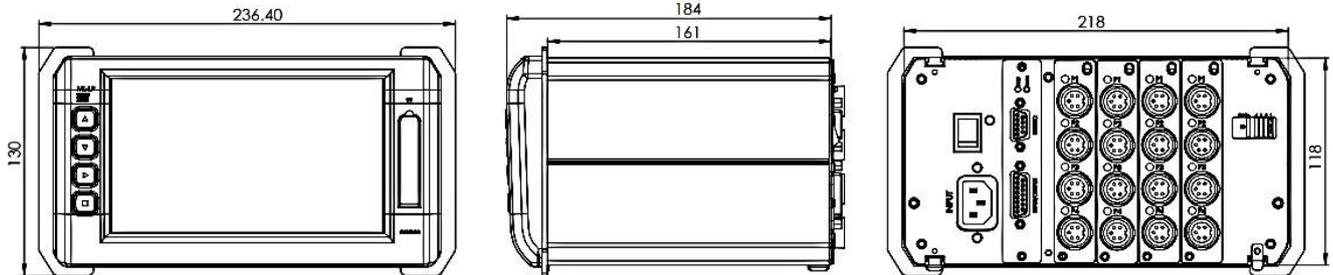


● Specification

Model	ML-LP-S	ML-LP-R	ML-LP-GR	ML-LP2-S	ML-LP-A	ML-LP-F	ML-LP-DF
Display	7" TFT color LCD with touch screen						
Resolution	0.001mm / 0.01mm (Option: 0.0001mm)				0.0001mm	Dependent on Load cell	
Input channels	1Ch ~ 16Ch	1Ch ~ 4Ch	1Ch ~ 10Ch	1Ch ~ 16Ch	Air 1Ch ~ 6Ch	Load cell 1ch	Probe 1Ch Load cell 1Ch
Size(mm) W x H x D (Panel hole W x H)	226 x 127 x 185 (221 x 121)						
Power input	AC100~220V 50Hz/60Hz, Option : DC24V						
Calculation modes	Peak, Off-peak, Maximum, Minimum, Max-min, Average, Sum, Diameter(3point), Plus, Minus, Absolute value... etc.						
Data communication	RS232C (Option: RS485)						
Serial command	CLEAR , ZERO , RESET , START , RECALL						
I/O Port	15PIN : 6 Inputs(START,ZERO,MODEL BIT,etc) / 6 Outputs(OK,NG,READY,etc) Option : 37PIN - Extended I/O (Add more outpins)						
Data storage	Micro SD card						
Available probes*	Analog(HBT / LVDT)			Digital(DL)	Air	Load cell	Probe & Load cell

*On inquiry(other makers)

● Dimensions



● Order code

ML-LP-	GR	1	-	R	-	G	5	E	
1	2	3		4	5	6	7	8	9

1	ML-LP-		5	A	Special or 16bit	6	X	15mm
	ML-LP2-			A	4mm		6	LC	Loadcell<num.7 skip>
2	S	General/Statistical	6	B	10mm	7	1	Resolution : 1um
	R	Runout		C	25mm		2	2um
	RH	Runout High Speed		D	RDP, ACT1000A		3	0.1um
	DF	Displacement Vs Force		E	RDP, ACT2000A		4	0.5um
	F	Force/Weight		F	special		5	by Probe and ADC
	A	Air Gauge		G	Magnescale		6	special
	GR	Grade		H	Heidenhain		8	standard
3	1~16	channels	I	Current Output Sensor	S	special		
	R	9600~115200bps, N81	M	Marposs	9	E		Extended I/O
4	RS	RS485	S	Solartron				
	5		standard	V	Voltage Output Sensor			

ML-PBM

- Wireless portable
- Channel : 1~8ch
- 3.5" , 4.2" Color TFT LCD
- Easy operation with touch screen
- Histogram display
- Saving data and settings
- Various calculation modes
- RS232C / RS485 communication



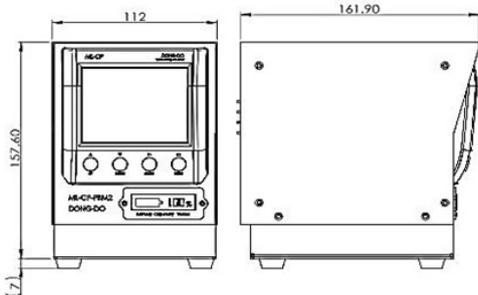
● Specification

Model	ML-CP-PBM	ML-MP-PBM
Display	3.5" TFT color LCD with touch screen	4.2" TFT color LCD with touch screen
Resolution	0.001mm / 0.01mm (Option: 0.0001mm)	
Input channels	1Ch ~ 4Ch	1Ch ~ 8Ch
Size(mm) W x H x D	112 x 165 x 162	142 x 149 x 162
Power input	LIPF6 2600mAh (Charging power - using for dedicated adapter)	
Calculation modes	Peak, Off-peak, Maximum, Minimum, Max-min, Average, Sum, Diameter(3point), Plus, Minus, Absolute value... etc.	
Data communication	RS232C (Option: RS485)	
Serial command	CLEAR , ZERO , RESET , START , RECALL	
I/O Port	15PIN : 6 Input(START,ZERO,MODEL BIT,etc) / 6 Output(OK,NG,READY,etc)	
Data storage	-	SD card
Available probes*	Analog(HBT / LVDT)	

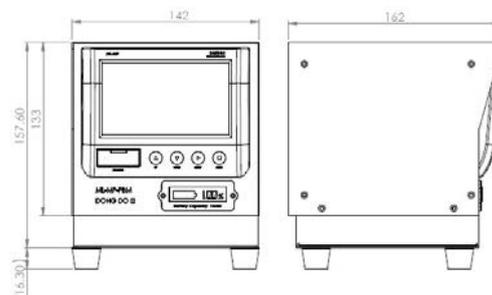
*On inquiry(other makers)

● Dimensions

· ML-CP-PBM



· ML-MP-PBM



● Order code

ML-MP-PBM-	R	1	-	R	-	A	1		
1	2	3		4	5	6	7	8	9

1	ML-CP-PBM-	
	ML-MP-PBM-	
2	S	General/Statistical
3	1~8	channels
4	R	9600~115200bps, N81
	RS	RS485
5		standard
	A	Special or 16bit
6	A	4mm
	B	10mm
	C	25mm
	D	RDP, ACT1000A

6	E	RDP, ACT2000A
	F	special
	G	Magnescape
	H	Heidenhain
	M	Marposs
	S	Solartron
7	X	15mm
	DL	DL series
	1	Resolution : 1um
	2	2um
8	3	0.1um
	4	0.5um

7	5	by Probe and ADC
	6	special
8		standard
	S	special

ML-16PT

- Channel : 1~16ch
- 7" Color TFT LCD
- Easy operation with key pad
- Special program
- Various communication
- RS232C / RS485
- Various calculation modes
- I/O interface

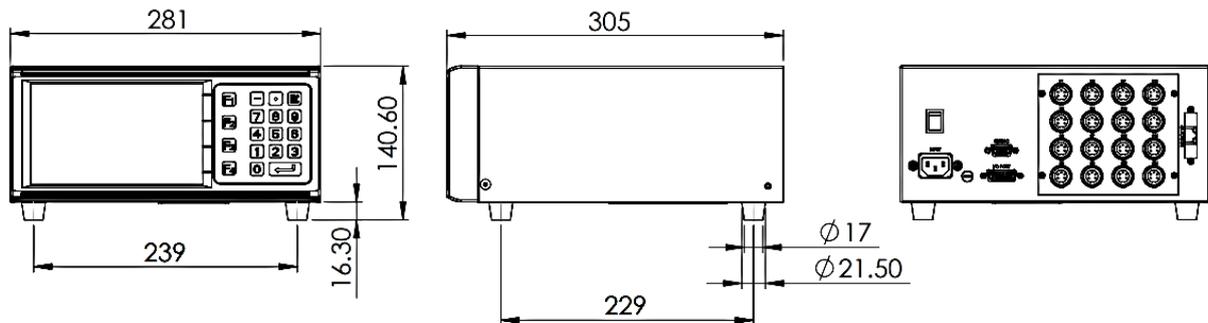


● Specification

Model	ML-16PT-S
Display	7" Color TFT LCD
Resolution	0.001mm / 0.01mm (Option: 0.0001mm)
Input channels	1Ch ~ 16Ch
Size(mm) W x H x D	281 x 141 x 305
Power input	AC100~220V 50Hz/60Hz
Calculation modes	Maximum, Minimum, Max-min, Average, Sum, Plus, Minus... etc.
Data communication	RS232C (Option: RS485)
Serial command	-
I/O Port	15PIN : 6 Inputs(START,ZERO,MODEL BIT,etc) / 6 Outputs(OK,NG,READY,etc) Option : 25PIN - Extended I/O (Add more outpins)
Data storage	-
Available probes*	Analog(HBT / LVDT)

*On inquiry (other makers)

● Dimensions



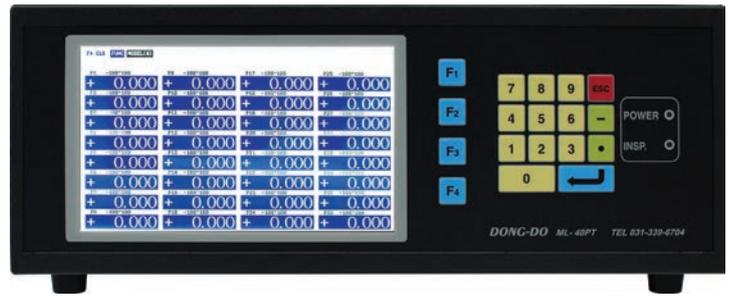
● Order code

ML-16PT-	S	14	-	RS	-	B	2	S	E
1	2	3		4	5	6	7	8	9

1	ML-16PT-		6	LC	Loadcell<num.7 skip>
	2	S		General/Statistical	1	Resolution : 1um
3	1~16	channels	7	2	2um
	R	9600~19200bps, N81		3	0.1um
4	RH	115200bps	8	4	0.5um
	RS	RS485		5	by Probe and ADC
	CC	CC LINK		6	special
	DP	PROFI-BUS		9	standard
	RU	Special			S	special
5		standard	9	E	Extended I/O
	A	Special or 16bit			
6	A	4mm	B	10mm	
			C	25mm	
			D	RDP, ACT1000A	
			E	RDP, ACT2000A	
			F	special	
			G	Magnescape	
6	H	Heidenhain			
	I	Current Output Sensor			
	M	Marposs			
	S	Solartron			
	V	Voltage Output Sensor			
6	X	15mm			

ML-40PT

- Channel : 1~32ch
- 7" Color TFT LCD
- Easy operation with key pad
- Special program
- Various communication
- RS232C / RS485
- Various calculation modes
- I/O interface

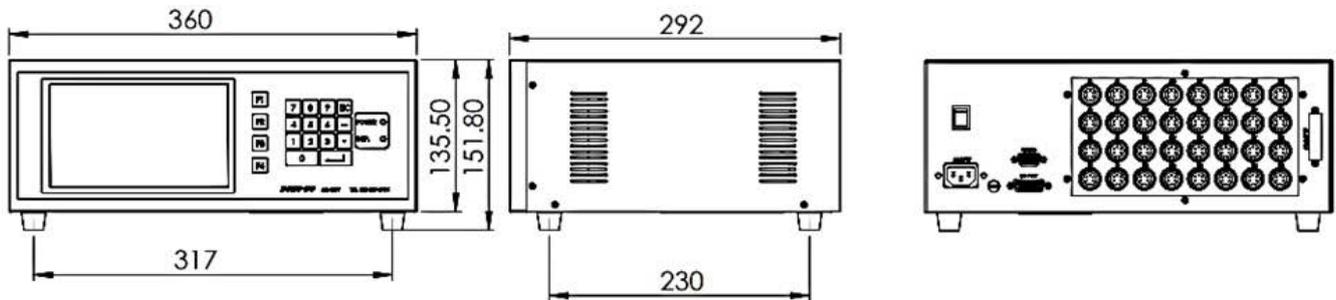


● Specification

Model	ML-40PT-S	ML-40PT-A
Display	7" Color TFT LCD	
Resolution	0.001mm / 0.01mm (Option: 0.0001mm)	0.0001mm
Input channels	1Ch ~ 32Ch	Air 1Ch ~ 12Ch
Size(mm) W x H x D	360 x 151 x 290	
Power input	AC100~220V 50Hz/60Hz	
Calculation modes	Maximum, Minimum, Max-min, Average, Sum, Plus, Minus... etc.	
Data communication	RS232C (Option: RS485)	
Serial command	-	
I/O Port	15PIN : 6 Input(START,ZERO,MODEL BIT,etc) / 6 Output(OK,NG,READY,etc) Option : 25PIN - Extended I/O (Add more outpins)	
Data storage	-	
Available probes	Analog(HBT / LVDT)	Air

*On inquiry (other makers)

● Dimensions



● Order code

ML-40PT-	S	22	-	R	-	X	2		E
1	2	3		4	5	6	7	8	9

1	ML-40PT-		6	A	4mm	7	X	15mm
	S	General/Statistical		B	10mm		LC	Loadcell<num.7 skip>
2	A	Air Gauge	6	C	25mm	7	1	Resolution : 1 um
	1~32	channels		D	RDP, ACT1000A		2	2um
4	R	9600~19200bps, N81	6	E	RDP, ACT2000A	7	3	0.1um
	RH	115200bps		F	special		4	0.5um
	RS	RS485		G	Magnescape		5	by Probe and ADC
	CC	CC LINK		H	Heidenhain		6	special
	DP	PROFI-BUS		I	Current Output Sensor		8	standard
	RU	Special		M	Marposs			S	special
5		standard	6	S	Solartron	9		
	A	Special or 16bit		V	Voltage Output Sensor		E	Extended I/O

ML-MUX

- Channel : 1~32ch
- High speed data transmission
- RS232C / RS485 data communication
- Serial command
- I/O interface



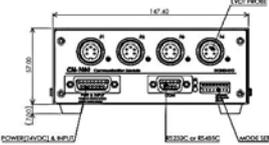
● Specification

Model	CM-1000	ML-LPC-S	ML-LPC-A	ML-32P-CT1-S	ML-32P-CT1-A
Display	-				
Resolution	0.001mm / 0.01mm (Option: 0.0001mm)		0.0001mm	0.001mm/ 0.01mm (Option: 0.0001mm)	0.0001mm
Input channels	1Ch ~ 4Ch	1Ch ~ 16Ch	Air 1Ch ~ 6Ch	1Ch ~ 32Ch	Air 1Ch ~ 13Ch
Size(mm) W x H x D	147 x 57 x 97	226 x 127 x 185		360 x 151 x 290	
Power input	DC24V	AC100~220V 50Hz/60Hz			
Data communication	RS232C (Option: RS485)				
Serial command	CLEAR , ZERO , RESET , START , RECALL			-	
I/O Port	None or 15PIN I/O type - 4 Inputs(Scan, Reset, Zero, Start) / 2 Outputs(Ready, Busy)				
Data storage	-				
Available probes*	Analog(HBT / LVDT)		Air	Analog(HBT / LVDT)	Air

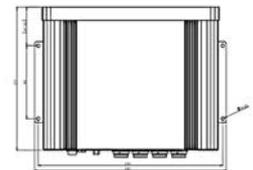
*On inquiry (other makers)

● Dimensions

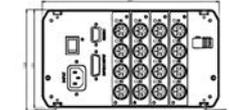
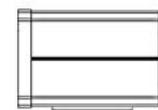
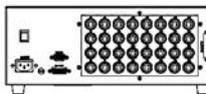
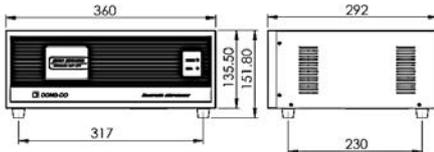
CM-1000



ML-LPC



ML-32P-CT1



● Order code

ML-LPC-	S	16	-	R	-	X	1		
1	2	3		4	5	6	7	8	9

1	CM-1000-	
	ML-LPC-	
	ML-32P-CT1-	
2	S	General/Statistical
	A	Air Gauge
3	1~32	channels
4	R	9600 N81
	RH	115200bps
	RU	Special
5		standard
	A	Special or 16bit
6	A	4mm

6	B	10mm
	C	25mm
	D	RDP, ACT1000A
	E	RDP, ACT2000A
	F	special
	G	Magnescale
	H	Heidenhain
	I	Current Output Sensor
	M	Marposs
	S	Solartron
	V	Voltage Output Sensor
	X	15mm

7	1	Resolution : 1um
	2	2um
	3	0.1um
	4	0.5um
	6	special
	5	by Probe and ADC
8		standard
	S	special

ML-COLUMN

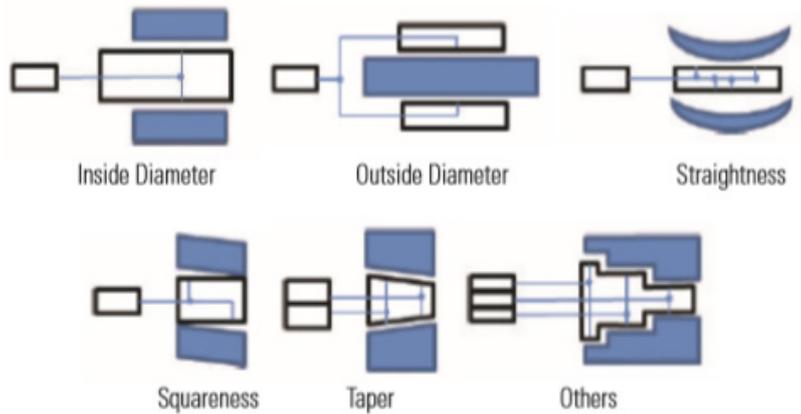
- Channel : 1~4ch
- Color TFT LCD
- 3color LED bar
- RS232C data communication
- Various calculation modes
- I/O interface



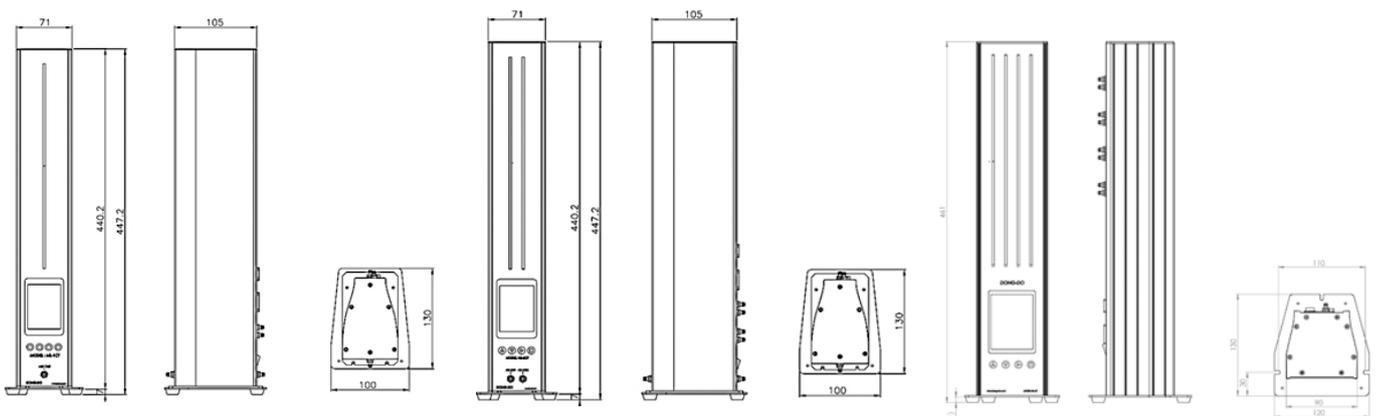
● Specification

Model	ML-1CT-A	ML-2CT-A	ML-4CT-A
Display	1 row 3color bar, 2.8" Color TFT LCD	2 row 3color bar, 2.8" Color TFT LCD	3~4 row 3color bar, 3.5" Color TFT LCD
Resolution	0.0001mm		
Input channels	Air 1Ch	Air 2Ch	Air 3Ch ~ 4Ch
Size(mm) W x H x D	100 x 448 x 130		170 x 487 x 110
Power input	Required Adapter (DC 24V 1.5A)		
Calculation modes	Maximum, Minimum, Max-min, Average, Sum, Plus, Minus... etc.		
Data communication	RS232C		
Serial command	-		
I/O Port	2 Inputs(Start, Model) / 4 Outputs(Ready, Busy, OK, NG)		
Data storage	-		
Available probes	Air		

● Application



● Dimensions



B-1000

- Wireless(Bluetooth) portable bore gauge
- Realtime value checking by 2" color TFT LCD
- 0.1um resolution
- $\leq 0.15\mu\text{m}$ repeatability
- Built-in Li-ion rechargeable battery
- Wireless charging
- Easy & fast bluetooth link by BAP-1000



● Specification

Model	B-1000
Display	2" Color TFT LCD
Bore measuring range	Dependent on BMD
Internal gauge measuring range	$\pm 1.5\text{mm}$
Internal gauge resolution	0.001mm or 0.0001mm
Internal gauge repeatability	$\leq 0.15\mu\text{m}$
Internal gauge linearity	0.1% of reading
Bluetooth version	5.0
Operating temp.	0 ~ 40 °C
Protection rating	IP65
Compatibility	M11 X 0.75mm(Option : M10 X 1mm)

BAP-1000

- Bluetooth Access Point for B-1000
- Supports a quick, comfort, and safe Bluetooth link
- Maximum 8 units of B-1000



● Specification

Model	BAP-1000
Bluetooth version	5.0 +8dBm
Bluetooth range	100m(Open space)
Antennas	3dBi Dipole type
Power input	DC 24V / 0.1A
Output	RS232C
Maximum link.	8units

● Application



IM-2DW / IM-2DT / IM-2DT-P

- Color TFT touch screen LCD
- 2-axis angle display at once
- Very intuitional angle display
- Small size, light, rechargeable battery inside
- Various resolution : 0.01° / 0.001°
- RS232C serial communication with PC

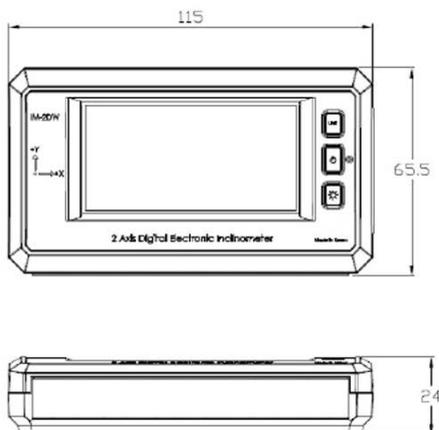


● Specification

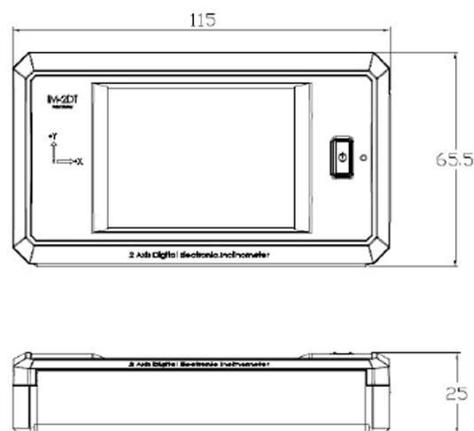
Model	IM-2DW	IM-2DT	IM-2DT-P
Display	2.8" 128 x 64 pixel, Black & White LCD	2.8" 320 x 240 pixel, Color TFT LCD (Touch pad)	
Measuring range	±30°	±30°	±15°
Resolution	0.01°(0.17mm/m)	0.01°(0.17mm/m)	0.001°(0.017mm/m)
Accuracy	±0.03° at +/-3° ±0.05° at +/-30°	±0.03° at +/-3° ±0.05° at +/-30°	±0.015° at +/-3° ±0.03° at +/-15°
Non linearity	<1% FS	<1% FS	<1% FS
Response time	<1.0 sec	<1.0 sec	<4.0 sec
Size(mm) W x H x D	115 x 65.5 x 24	115 x 65.5 x 25	
Power input	Li-ion Battery 3.7V (Rechargeable)		
Data communication	RS232C(Required dedicated cable)		
Serial command	Call (Data X / Y)		

● Dimensions

• IM-2DW



• IM-2DT / IM-2DT-P



● Serial cable

- **ISC-T** : RS232C serial communication
- **ISC-TP** : RS232C serial communication with USB recharging

Schwenk

- High measuring accuracy
- Long wear life
- For hand gauge
- Automatic measurement



- Technical data OD measuring sleeves

Range of application D	mm	mm	mm	mm	mm	mm
From	2.5	6.1	20.1	40.1	60.1	130.1
To	6	20	40	60	130	300
Travel S	0.15	0.2				
Front distance H	1.5/6	2.5/10	3.5/10	3.5/10	4/10	6/18
Front distance H(blind bores)	1	1	1.2	1.2	1.2	3
Length of sleeve H	10	15	20	28	33	55
Repeatability	1	0.5			1	2
Thread	M11					

- OD Measuring sleeves, standard

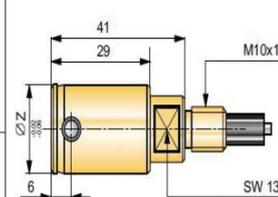
Sleeve - ϕ (mm)	h(mm)	Sleeve - ϕ (mm)	h(mm)	Sleeve - ϕ (mm)	h(mm)	blind bores
2.5 - 6	1.5	300 00000	6	300 00002	1	300 00001
6.1 - 12	25	301 00000	10	301 00002	1	301 00001
12.1 - 20	2.5	302 00000	10	302 00002	1	302 00001
20.1 - 30	3.5	303 00000	10	303 00002	1.2	303 00001
30.1 - 40	3.5	304 00000	10	304 00002	1.2	304 00001
40.1 - 60	3.5	305 00000	10	305 00002	1.2	305 00001
60.1 - 80	4.0	306 00000	10	306 00002	1.2	306 00001
80.1 - 100	4.0	307 00000	10	307 00002	1.2	307 00001
80.1 - 100	4.0	308 00000	10	308 00002	1.2	308 00001
110.1 - 120	4.0	309 00010	10	309 00012	1.2	309 00011
120.1 - 130	4.0	310 00010	10	310 00012	1.2	310 00011
> 130	on inquiry					

Hexacon

PMK - NO - 2 - POINT

Size NO - 03
Standard
Supplied with thread M 10 x 1
Measuring range is 0.20mm.

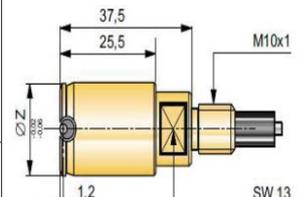
Order example:
PMK - NO - 03 - 34.08



PMK - SL / Blind Bore

Size SL - 03
Blind bore
for type 03
From diam. Φ 15 to 40 mm
"X" distance is 1.2 mm.

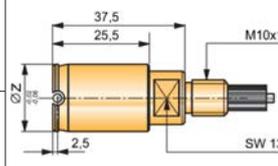
Order example:
PMK - SL - 03 - 30.97



PMK -XK - 03 $\phi > 15$ mm

Size XK - 03
From diam. $\Phi > 15$ mm
"X" distance is 2.5 mm.

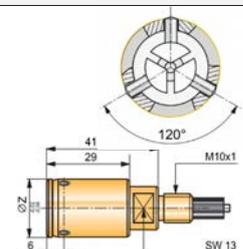
Order example:
PMK - XK - 03 - 26.5



PMK - NO / 3 - POINT Version

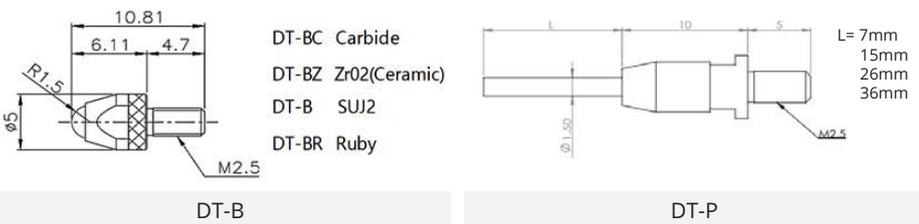
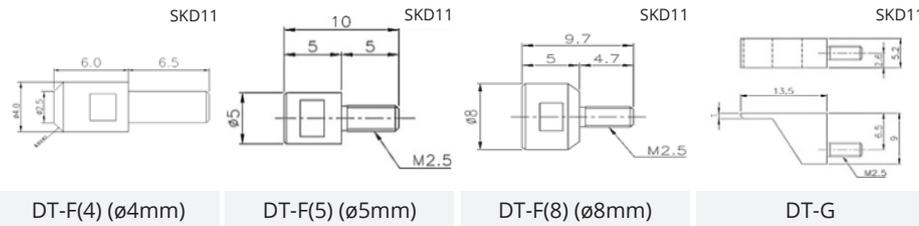
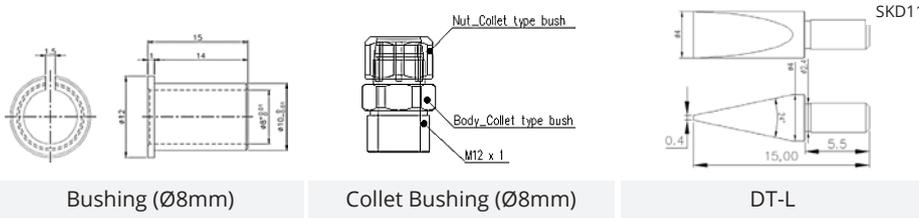
Hexacon 3-point PMK are based on the latest technology. Hexacon 3-p Plug design is unique and true 3-point measurement, and registered (applied for) under an international patent. 3-point-PMK are used mainly to measure trilobing which cannot be measured with 2-point plugs

Order example:
PMK - NO - 03 - 3P - 43.65



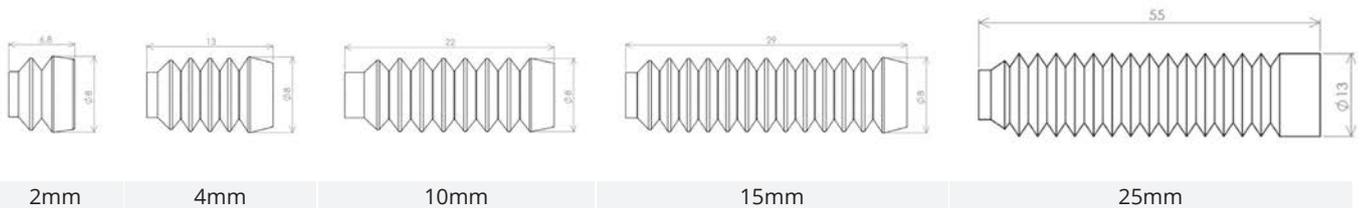
Probe Acc.

Contact Tip, Bushing



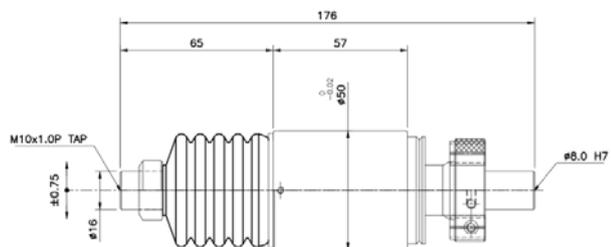
- How to set probes on system

Bellows



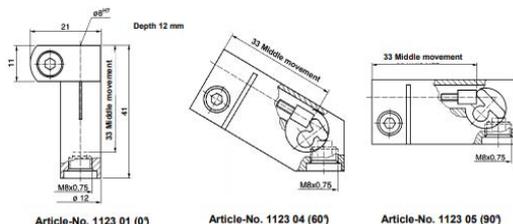
DF-3000

- Centering holder for BMD
- with weight compensation
- sprung loaded
- with radial compensation
- 0 to 1.5(±0.75)mm
- with knurled ring adjustment



HAFNER

- Various measuring tasks
- extend, bypass or deviate the range between.
- Angular head (0°, 30°, 45°, 60°, 90°)



AMP-100

- DC Amplifier(DC Voltage, Ampere output)
- Compatible with HBT Sensor
- Adjustable Span & Zero
- Easy to use
- Low cost

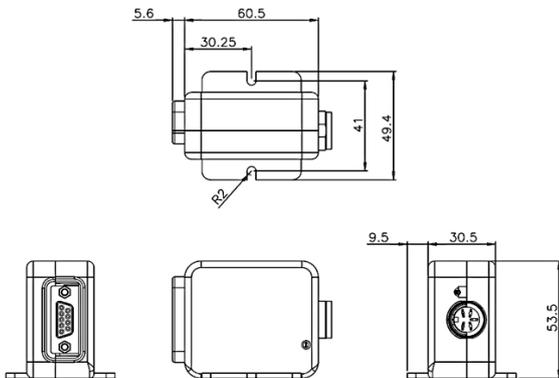


● Connection(D-SUB 9pin map)

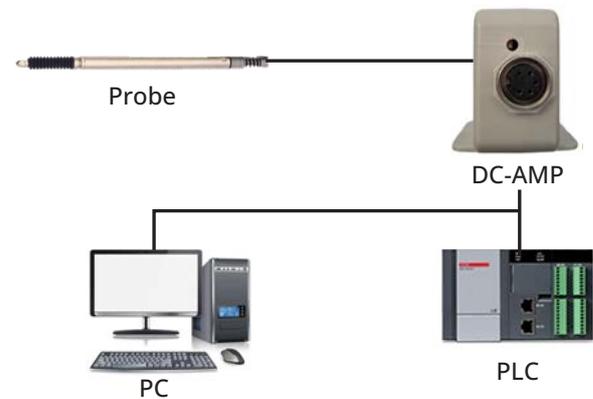
Model	AMP-100-A1	AMP-100-B1	AMP-100-B3
In-put	DC±12V	DC 24V	DC 24V
Out-put	DC 0~5V	DC 0~5V	4~20mA
Pin 1	EXC- : -12V	-----	-----
Pin 2			
Pin 3	SIG- : 0V(GND)	SIG- : 0V(GND)	SIG- : 0V(GND)
Pin 4	EXC- : +12V	-----	-----
Pin 5			
Pin 6	SIG+ : Out-put(0~5V)	SIG+ : Out-put(0~5V)	-----
Pin 7		-----	SIG+ : Out-put(4~20mA)
Pin 8	-----	EXC- : 0V	EXC- : 0V
Pin 9	-----	EXC+ : 24V	EXC+ : 24V

***Caution : Please connect after checking the pin number.**

● Dimensions



● Applications



● Specification

Model	AMP-100-A1	AMP-100-B1	AMP-100-B3
Input	DC±12V	DC24V	DC24V
Output	0~5V	0~5V	4~20mA
Input Sensor terminal socket	Din 5pin	Din 5pin	Din 5pin
In/Output terminal conn	D-sub 9pin	D-sub 9pin	D-sub 9pin
Gain(Factory Init tune to DP-S1)	5.0 mV/μm	5.0 mV/μm	0.016 mA/μm
Gain(Factory Init tune to DP-S2)	2.5 mV/μm	2.5 mV/μm	0.008 mA/μm
Gain(Factory Init tune to DP-S4)	1.25 mV/μm	1.25 mV/μm	0.004 mA/μm
Gain(Factory Init tune to DP-10)	0.5 mV/μm	0.5 mV/μm	0.0016 mA/μm
Gain(Factory Init tune to DP-15)	0.33.. mV/μm	0.33.. mV/μm	0.00106.. mA/μm
Gain(Factory Init tune to DP-25)	0.2 mV/μm	0.2 mV/μm	0.00064 mA/μm
Nonlinearity	0.1% in Output range	0.1% in Output range	0.1% in Output range

AEC-1000

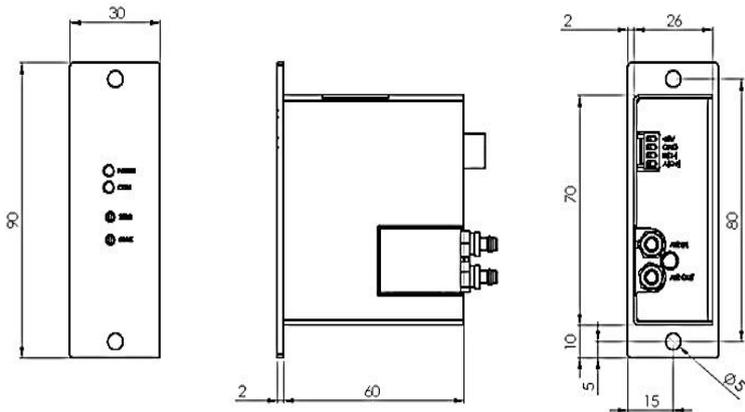
- Air electronic converter
- Measuring unit for air gauge
- Adjustable Span & Zero
- Easy to use
- Low cost



● Specification

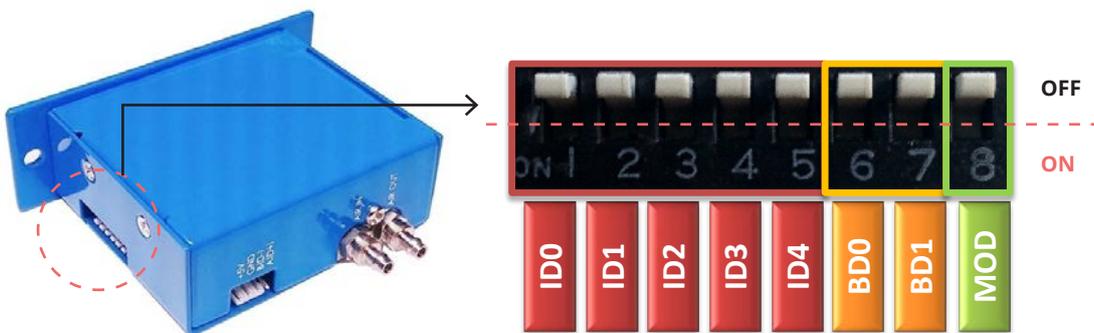
Model	AEC-1000
Input channels	1Ch
Display	2 Color LED (Power , COM)
Data communication	RS485 (Connector - Molex 7880)
Power	DC 5V
Resolution	0.001 (0000~9999)
Air pressure	2 Bar
Size(mm) W X H X D	30 X 90 X 62

● Dimensions



POWER VCC (5V)
POWER GND (0V)
RS-485 -
RS-485 +
AIR IN
AIR OUT

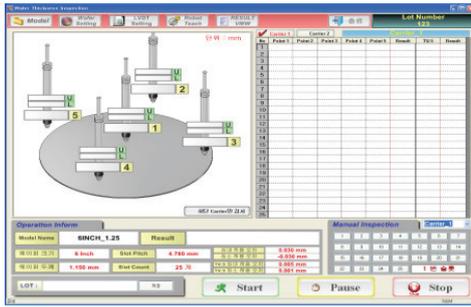
● Switch configuration



ID4	ID3	ID2	ID1	ID0	Desc	BD1	BDO	Desc	MOD	DESC
OFF	OFF	OFF	OFF	OFF	R00	OFF	OFF	9600bps	OFF	Normal Operation
OFF	OFF	OFF	OFF	ON	R01	OFF	ON	1920bps	OFF	Normal Operation
...	...	...	...	...	...	ON	OFF	57600bps	...	...
ON	ON	ON	ON	ON	R31	ON	ON	115200bps	ON	Auto Operaton

Wafer Thickness Measuring System

● Display



● Equipment Overview

- Wafer Thickness Measurement system.

PCB Thickness Measuring System

● Display

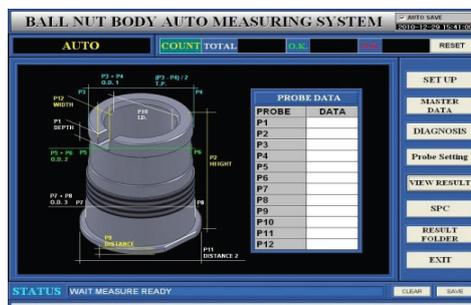


● Equipment Overview

- PCB thickness measurement system
- SPC Analysis-Cp,Cpk

Ball Nut Body Auto Measuring System

● Display

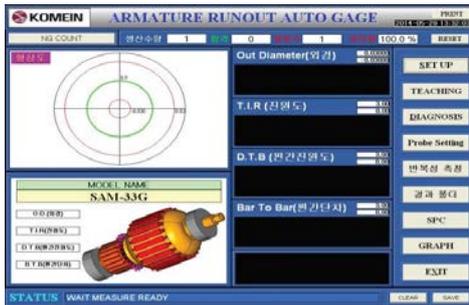


● Equipment Overview

- In-Line Measurement System for Depth, Overall Length, Height, Out-Diameter, TP, Distance, I.D WIDTH of ball nut body.

Armature RO & OD Auto Measuring System

● Display

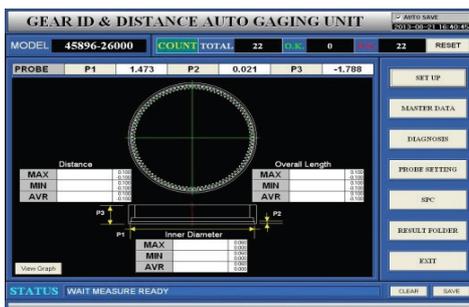


● Equipment Overview

- RUNOUT, B TO B, D TO B, O.D measurement system
- SPC Analysis_Cp,Cpk

Gear I.D & Distance Semi-Auto Measuring System

● Display



● Equipment Overview

- In-Line Measurement system for gear overall length
- Inner-Diameter Distance

Timing Chain Case Semi-Auto Measuring System

● Display



● Equipment Overview

- OFF-LINE Measurement system for DISTANCE, PARALLELISM,
- T.P of TIMING CHAIN CASE

Measuring Software

● SWASH PLATE AUTO M/S SYSTEM

SWASH PLATE AUTO MEASURING SYSTEM

측정MC	M/C #1	M/C #1 TOTAL	M/C #2 TOTAL	PROBE DATA	STATUS
두께 A (0.000)	0.000	0.010	0.000	0.010	OK
두께 B (0.000)	0.001	0.020	0.000	0.020	OK
상부 평면도 (0.000)	0.003	0.000	0.005	0.010	OK
하부 평면도 (0.000)	0.002	0.000	0.005	0.010	OK
상부 평면도 (0.000)	0.003	0.000	0.006	0.012	OK
하부 평면도 (0.000)	0.001	0.000	0.000	0.010	OK
두께 A MAX (0.000)	0.002	0.010	0.000	0.010	OK
두께 A MIN (0.000)	-0.002	0.010	0.000	0.010	OK
두께 A 변차 (0.000)	0.003	0.010	0.000	0.010	OK

● DETENT BODY ASS'Y AUTO M/S SYSTEM

DETENT BODY ASS'Y AUTO MEASURING SYSTEM

MODEL: D200 | COUNT: 17 | TOTAL: 0 | OK: 0 | NG: 17 | RESET

MEASUREMENT VALUES:

- HEIGHT (A1): 27.501
- HEIGHT (A2): 27.285
- HEIGHT (B1): 27.248
- HEIGHT (B2): 28.341
- HEIGHT (C1): 27.358
- HEIGHT (C2): 28.368
- HEIGHT (D): 27.839
- HEIGHT (E): 29.268
- END HEIGHT: 20.381
- DISTANCE: 55.598

STATUS: WAIT MEASURE READY

● ARMATURE OD MQA M/S SYSTEM

정류자 외경 MQA Measurement System

NG COUNT: 12 | 생산수량: 11 | 불량률: 8.3% | RESET

Out Diameter (외경): 22.0533

T.I.R (전원도): 3.4

D.T.B (편간전원도): 1.8

Bar To Bar (편간단차): 1.9

STATUS: WAIT MEASURE READY

● INNER-DIAMETER M/S SYSTEM

INNER-DIAMETER MEASURING SYSTEM

GAGE: 0.000 | 0.001 | 0.000

INNER DIAMETER 1(mm): 0.000

INNER DIAMETER 2(mm): 0.001

INNER DIAMETER 3(mm): 0.000

STATUS: O.K.

● SURFACE RESISTIVITY TESTER

posco SURFACE RESISTIVITY TESTER

AUTO | 생산량: 168 | 불량률: 1 | RESET

Resistivity (Ohm): 0.000079

STATUS: WAIT MEASURE START

● BIW M/S SYSTEM

BIW MEASUREMENT SYSTEM

BODY No: 00001744 | 생산수량: 1 | 불량률: 0 | RESET

MEASUREMENT VALUES:

- RH FRT UPR: -0.42 / Y
- LH FRT UPR: -0.65 / Y
- RH RR UPR: +0.96 / Y
- LH RR UPR: +0.75 / Y
- RH FRT LWR: -0.59 / Y
- LH FRT LWR: +0.08 / Y
- RH RR LWR: +0.53 / Y
- LH RR LWR: +0.48 / Y

STATUS: WAIT MEASURE READY

● U/BODY M/S SYSTEM

U/BODY MEASUREMENT SYSTEM

BODY No: 00001765 | 생산수량: 1 | 불량률: 0 | RESET

STATUS: WAIT MEASURE READY

● SHIM SELECTION GAUGE SYSTEM

SHIM SELECTION GAGE SYSTEM

MEASUREMENT POINTS: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14

SHIM FORMULAS:

- SHIM1: B - A - D + 0.6
- SHIM2: B + C - E - S1 + 0.25
- PRELOAD: S1 + S2 - B0 - CK + E
- GAP: (C + A) - (S2 + E - D)

STATUS: 먼저 MODEL을 선택하십시오.

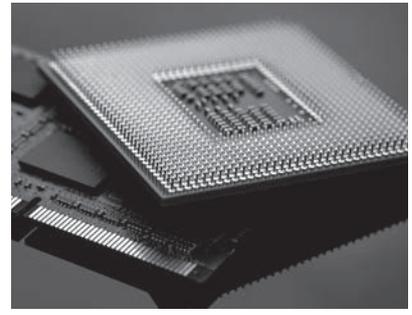
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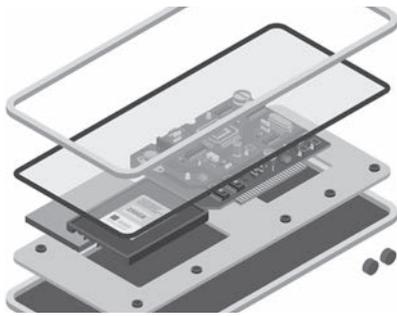
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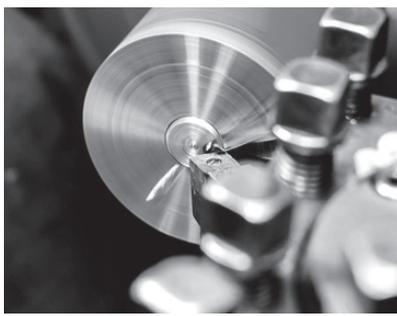
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Mobile



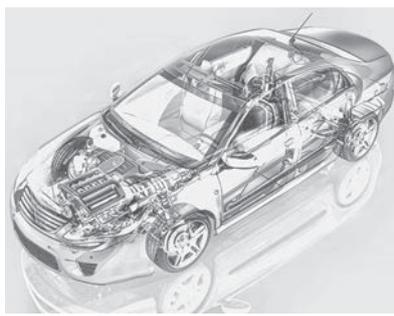
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- **HEAD OFFICE**

DONGDOTECH CO.,LTD.
DONGDOTECH E&M CO.,LTD.

247-7, Madangbawi-ro, Bongdam-eup,
Hwaseong-si, Gyeonggi-do, Republic of Korea
Tel +82-31-204-8611 Fax +82-31-204-8610
E-mail dongdotech@dongdotech.co.kr

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