

HEIDENHAIN-METRO Length Gauges

Accuracy $\pm 0.5 \mu\text{m}$



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Large measuring ranges together with their high accuracy make the MT 60 and MT 101 HEIDENHAIN-METRO length gauges attractive for incoming inspection, production monitoring, quality control, or anywhere parts with very different dimensions are measured. But they are also easy to mount as highly accurate position encoders, for example on sliding devices or X-Y tables.

Plunger actuation

M version length gauges feature an integral motor that retracts and extends the plunger. While the MT 101 M operates at a constant gauging force, the MT 60 M allows you to select from three gauging force levels.

K version gauges have no integral plunger actuation. The plunger is freely movable. It can be connected to moving elements such as linear slides and X-Y table by a coupling.

Mounting

The length gauges are mounted onto a flat surface by two screws. HEIDENHAIN offers the M versions for mounting in the accessory MS 100 and MS 200 gauge stands.



	Incremental			
	MT 60 M	MT 60 K	MT 101 M	MT 101 K
Measuring standard	DIADUR graduation on glass ceramic			
Incremental signals	~ 11 μA_{PP}			
Signal period	10 μs			
System accuracy	$\pm 0.5 \mu\text{m}$		$\pm 1 \mu\text{m}$	
Recommended measuring step	1 μm to 0.1 μm			
Measuring range	60 mm		100 mm	
Plunger actuation	Motor driven	Via coupling	Motor driven	Via coupling
Protection	IP 50			
Reference mark	One			



Gage-Chek®

The Gage-Chek is a multi-axis metrology display that accepts up to eight discrete inputs. It features intuitive visual displays, helpful audio cues and user-defined formulas. It also reports dynamic Min/Max measurements, provides SPC analyses from an integrated database and includes connectivity to PCs and other peripherals.



Specifications

LCD	5.9" Color
Resolution down to	0.000004" or 0.0001 mm
Operating temperature	0°C to 45°C
Enclosure (W x H x D)	11.5" x 7.5" x 2.75"
Base (W x H x D)	10" x 2" x 7.5"
Enclosure weight	3.5 lbs
Base weight	7 lbs
Power Voltage range	85 Vac to 264 Vac
Power frequency range	43 Hz to 63 Hz

Inputs

1, 4, 8 or 16 input measurement channels

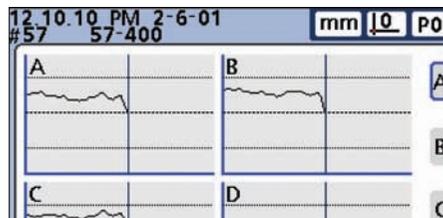
External connections:
Footswitch
Remote keypad
Touch probe
RS-232C serial port
USB port
Parallel data port

Outputs

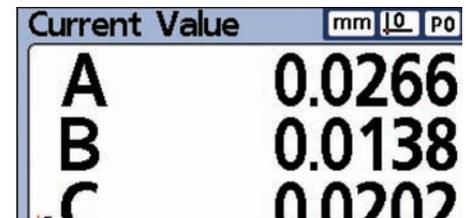
2 relay outputs
Parallel data port
RS-232C serial port
USB port



Visual feedback A highly visible, intuitive and familiar interface with standard color cues. Instantly informs operators of pass/fail performance details for critical part dimensions.



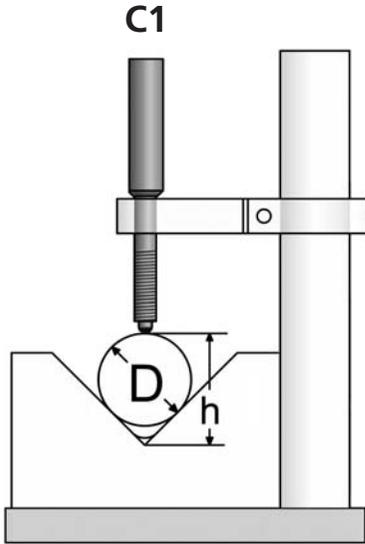
Integrated SPC database Store, retrieve and manage enormous amounts of measurement data on the shop floor. Check quality control of each gage. Share information locally and globally.



Formulas Up to 16 output channels apply mathematical formulas to measurement data for on-the-spot part analysis.

Powerful formulas

Create Gage-Chek formulas that transform simple measurements into the specific data you need for your unique applications; as shown in this example of a pin gage application.



Formulas mm | 0 | P0

About
Dimensions
Formats
Formulas
Tolerances
SPC
Header
Memory

Channels

Dimension D
(visible)
 $2 * C1 / (\sqrt{2} + 1)$

Current Value mm | 0 | P0

D **14.745**

View... in/mm Master Menu...

Encoder measurement (C1) → transformed by the formula → displays pin diameter (D)

$$Pin\ Diameter\ D = \frac{2(h)}{(\sqrt{2} + 1)}$$

Flexible data views

Change Gage-Chek data presentations at the touch of a button.

Display simple numeric digital readouts, dial gages, bar graphs, database tables or statistical analyses.

Current Value mm | 0 | P0

A 1.8627
B 2.3480
C -1.2127
D -1.3721

View... in/mm Master Menu...

B mm | 0 | P0

Nominal 2.3400
Low Limit 2.3300 High Limit 2.3500

2.3480

View... r... Dial... Data... DRO...

Current Value mm | 0 | P0

A 1.8627 A
B 2.3480 B
C -1.2127 C
D -1.3721 D

View... r... Dial... Data... DRO...

Digital readouts, dials and bar graphs

Display numeric and graphical current value, nominal, limit and warning information.

9:29:42 AM 3-12-05 #210 1.8627 mm | 0 | P0

A	B	C	D
1.8627	2.3480	-1.2127	-1.3721
1.8627	2.3480	-1.2127	-1.3721
1.8608	2.3471	-1.2103	-1.3705
1.8608	2.3471	-1.2103	-1.3705
1.8616	2.3465	-1.2094	-1.3710
1.8616	2.3465	-1.2094	-1.3710
1.8616	2.3465	-1.2094	-1.3710
1.8613	2.3460	-1.2098	-1.3714
1.8613	2.3460	-1.2098	-1.3714
1.8600	2.3450	-1.2100	-1.3716

View... r... Dial... Data... DRO...

9:29:42 AM 3-12-05 #210 2.3480 mm | 0 | P0

B 2.3480

Mean 2.3422
Max 2.3480
Min 2.3396
r 0.0084
σ(p) 0.0026
6 σ 0.0156
Pp 1.2792
Ppk 1.0123

View... r... Dial... Data... DRO...

9:29:42 AM 3-12-05 #210 2.3480 mm | 0 | P0

B

Ucl 0.0010
Lcl 0.0000

View... r... Dial... Data... DRO...

Database tables and graphs

Display raw measurement data, results of statistical analyses and data trends.

