IP Codes

Level 6: Dust -proof.
No ingress of dust allowed.
Level 5: Protected against water jets.
Water projected in jets against the enclosure from any direction shall have no harmful effects.

Technical Data

Dust/Water protection level: IP65 (IEC60529)*2
Measuring force: 7 to 12N
Battery: **SR44** (1 pc), **938882**, for initial operational checks (standard accessory)
Length standard: Electromagnetic rotary sensor
Battery life: Approx. 1.2 years under normal use
Standard accessories: Reference bar, 1 pc (except for 0-25mm (0-1") models) Spanner (**No. 301336**), 1 pc

*2 Rustproofing shall be applied after use.

Functions

Origin point setting (ABS length measurement system):
Pressing the ORIGIN button resets the ABS origin at the current spindle position. Origin values can be set depending on each size.

Zero setting (INC length measurement system):
A brief press on the ZERO/ABS button sets display to zero at the current spindle position and switches to the incremental (INC) measuring mode. A longer press resets to the ABS measuring mode.

Hold:
Pressing the HOLD button freezes the current value in the display. This function is useful for preserving a measurement in situations of poor visibility when the instrument must be moved away from the workpiece before the reading can be recorded.

Function lock:
This function allows the ORIGIN (origin point setting) function and the ZERO (zero setting) function to be locked to prevent these points being reset accidentally.

Auto power ON/OFF:
The reading on the LCD disappears after this instrument is idle for approx. 20 minutes, but the origin point is retained. Turning the spindle causes the reading on the LCD to reappear.

Data output*3:
Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

Error alarm:
In case of an overflow on the LCD or a computing error, an error message appears on the LCD, and the measuring function stops. This prevents an instrument from giving an erroneous reading. Also, when the battery voltage drops to a certain level, the low-battery-voltage alarm annunciator appears well before the micrometer becomes unusable.

*3: Only for the models with SPC data output

Optional accessories

(Only for models with data output function)
Connecting cables with output switch
1m: **No. 05CZA662**
2m: **No. 05CZA663**
USB Input Tool Direct
USB-ITN-B (2m): **No. 06ADV380B**
Connecting cables for **U-WAVE-T** (160mm)
No. 02AZD790B
For foot switch: **No. 02AZE140B**
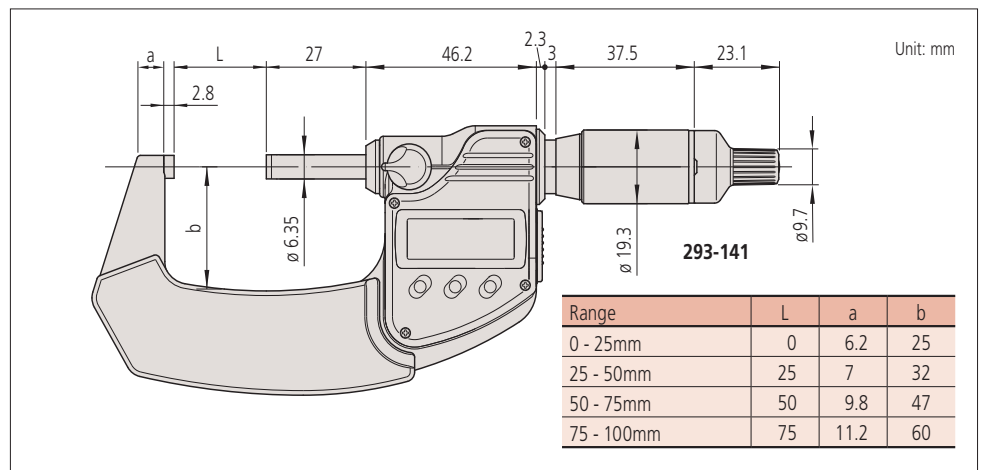Refer to page A-21 for details.

SPECIFICATIONS

Metric

Order No.		Range	Resolution	Accuracy*1	Flatness	Parallelism	Mass
with SPC data output	293-140	0 - 25mm		±1µm		1µm	265g
	293-141	25 - 50mm					325g
	293-142	50 - 75mm	0.001mm		0.3µm	2µm	465g
	293-143	75 - 100mm		±2µm			620g
without SPC data output	293-145	0 - 25mm		±1µm		1µm	265g
	293-146	25 - 50mm					325g
	293-147	50 - 75mm				2µm	465g
	293-148	75 - 100mm		±2µm			620g

*1 Excluding quantizing error

Inch/Metric

Order No.		Range	Resolution	Accuracy*1	Flatness	Parallelism	Mass
with SPC data output	293-180	0 - 1"		±.00005"		.00004"	265g
	293-181	1" - 2"					325g
	293-182	2" - 3"	.00005"/ 0.001mm		.000012"	.00008"	465g
	293-183	3" - 4"		±.0001"			620g
without SPC data output	293-185	0 - 1"		±.00005"		.00004"	265g
	293-186	1" - 2"					325g
	293-187	2" - 3"				.00008"	465g
	293-188	3" - 4"		±.0001"			620g

*1 Excluding quantizing error

DIMENSIONS

Unit: mm

293-141

Range	L	a	b
0 - 25mm	0	6.2	25
25 - 50mm	25	7	32
50 - 75mm	50	9.8	47
75 - 100mm	75	11.2	60

Measuring time on a 6-stepped workpiece with one hand

Thanks to the quick movement, positioning times are reduced by 60%* and measuring times by 35%* compared with a conventional micrometer.

*According to Mitutoyo's comparison test data for measuring time on typical workpieces.

Time needed to measure a multi-stepped cylindrical workpiece (with one hand)
Positioning time
Measuring Time
53 sec. (41 sec. / 12 sec.) Conventional model
22 sec. (10 sec. / 12 sec.) QuantuMike

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