

Measurement Data Management

Convenient data collection tool and quality control software

Mini-Printer Equipped with Data Logging Function SERIES 264 — Digimatic Mini-Processor DP-1VA LOGGER

In addition to the conventional (DP-1VR) printing and statistical calculation functions, data logger and USB output functions are added and enhanced!

- This is a palm-sized printer used to print measurement data from Digimatic gages or to perform statistical analysis.
- The versatile **DP-1VA LOGGER** printer not only prints measurement data, but performs a variety of statistical analyses, draws histograms and D-charts and also performs complex operations on Xbar-R control charts.
- The data logger function allows storage of up to 1,000 pieces of data in memory, and batch transfer of stored data to an Excel-format inspection certificate, etc., by connecting to a PC with a USB cable (optional).



Example of printout

MODE1

Various statistical calculations are executed using all input data. If the tolerance limits have been set, GO/±NG judgment and histogram creation are also enabled.

LIMIT DATA 1	
LSL	19.11 mm
USL	21.00 mm
TOL	1.89 mm
1 20.14 mm	
2 22.18 mm	
3 19.66 mm	
6 18.77 mm	
8 20.28 mm	
7 19.31 mm	
6 18.64 mm	
8 19.93 mm	
10 19.30 mm	
11 19.56 mm	
29 18.95 mm	
30 20.82 mm	
PART NO.:	
DATE 2018/ 2/15	
TIME 12: 5	
NAME:	
* RESULT *	
MAX 21.00 mm	
MIN 18.64 mm	
R 2.07 mm	
X 19.950 mm	
σn 0.4501 mm	
σn-1 0.4578 mm	
-NG 1	
+NG 0	
P 8.667 %	
Cp 0.888	
Cpk 0.815	
* HISTOGRAM *	
LSL 19.11 mm	
USL 21.00 mm	
TOL 1.89 mm	
DIV 1 10	
-NG 1 0	
LSL 19.1100 mm	
LSL 19.2500 mm	
LSL 19.4000 mm	
LSL 19.5500 mm	
LSL 19.7000 mm	
LSL 19.8500 mm	
LSL 20.0000 mm	
LSL 20.1500 mm	
LSL 20.3000 mm	
LSL 20.4500 mm	
LSL 20.6000 mm	
LSL 20.7500 mm	
LSL 20.9000 mm	
LSL 21.0000 mm	
-NG 1	
+NG 0	
P 8.667 %	
Cp 0.888	
Cpk 0.815	

MODE2

In addition to the MODE1 function, measurements within the tolerance limits are printed out as a D chart*. This chart allows you to identify the trend of variations in measurement data.
* D chart stands for Displacement chart.

LIMIT MODE	
LSL	27.22 mm
USL	28.27 mm
TOL	1.05 mm
L	
C	
U	
28.08mm	
27.67mm	
28.14mm	
28.01mm	
27.72mm	
27.41mm	
28.97mm	
27.12mm	
27.72mm	
27.58mm	
10 27.62mm	
28.14mm	
28.22mm	
28.45mm	
28.45mm	
28.00mm	
PART NO.:	
DATE 2018/ 2/17	
TIME 14:38	
NAME:	
* RESULT *	
N 10	
MAX 28.45 mm	
MIN 26.99 mm	
R 1.48 mm	
X 27.8563 mm	
σn 0.4184 mm	
σn-1 0.4270 mm	
-NG 0	
+NG 0	
P 0.000 %	
Cp 1.000	
Cpk 1.000	

MODE3

Only input of data automatically enables calculation processing of complex control limit values as well as calculation for creating an Xbar-R control chart.

SUB GR. NO. 1	
1	26.99 mm
2	28.77 mm
3	28.82 mm
4	29.70 mm
5	27.41 mm
6	28.84 mm
7	28.97 mm
X 26.9486 mm	
R 4.88 mm	
DATE 2018/ 2/17	
TIME 14:40	
NAME:	
SUB GR. NO. 2	
1	27.77 mm
2	27.13 mm
3	27.86 mm
4	27.84 mm
5	27.90 mm
6	28.65 mm
7	28.85 mm
X 27.7329 mm	
R 1.99 mm	
DATE 2018/ 2/17	
TIME 14:40	
NAME:	
CONTROL LIMIT	
DATE 2018/ 2/17	
TIME 14:40	
NO. OF SUB GR. 2	
SAMPLE SIZE	
X 27.0007 mm	
X-UCL 26.9009 mm	
X-LCL 26.9005 mm	
R 1.8000 mm	
R-UCL 2.2849 mm	
R-LCL 0.2849 mm	

Example of batch printing log data

In OUTLOG Setting 1

* OUT LOG START *	
* LOG = 10	
DATE 2018/ 2/15	
10:18:32	37.20 mm
10:18:44	39.64 mm
10:18:57	37.22 mm
10:17: 8	37.27 mm
10:17:58	38.88 mm
10:18:41	37.68 mm
10:18:18	37.70 mm
10:18:47	37.80 mm
10:20:17	37.58 mm
10:20:43	37.04 mm
* OUT LOG END *	

This setting allows printout of measurement time, measurement value, and GO/±NG judgment result.

In OUTLOG Setting 2

* OUT LOG START *	
* LOG = 10	
DATE 2018/ 2/15	
1	20.41 mm
2	20.37 mm
3	22.05 mm
4	22.31 mm
5	22.18 mm
6	20.68 mm
7	21.19 mm
8	21.29 mm
9	21.54 mm
10	22.03 mm

This setting allows printout of data number, measurement value, and GO/±NG judgment result.

In OUTLOG Setting 3

* OUT LOG START *	
* LOG = 10	
DATE 2018/ 2/15	
1	2018/ 2/15 10:28:28
	21.00 mm
2	2018/ 2/15 10:28:31
	20.10 mm
3	2018/ 2/15 10:28:33
	18.00 mm
4	2018/ 2/15 10:28:37
	18.03 mm
5	2018/ 2/15 10:29:29
	20.85 mm

This setting allows printout of data number, measurement date and time, and GO/±NG judgment result.

Specifications

- **264-505**
 - Model: **DP-1VA LOGGER**
 - Data input: Digimatic input, RS-232C input (specific to Mitutoyo **KA** counter)
 - Data processing capacity:
Mode 0: 100,000 pcs. of data
Modes 1,2: 9,999 pcs. of data
Mode 3: Sample size
10x9,999 subgroups=99,990 pcs. of data
 - GO/±NG judgment (five sets can be defined)
 - Output: 1) USB output
2) RS-232C data output at TTL levels
3) GO/±NG judgment result output (+NG, GO, -NG)
 - Input timer: Input intervals
0.25 s, 1 s, 5 s, 30 s, 1 min, 30 min, 60 min
 - Printing method: Thermal line printer
 - Printing speed: 0.8 s per line (6.5 mm/s) (using AC adapter)
 - Printing line: 10,000 lines of normal characters per roll
7,000 lines of large characters per roll
 - Printing paper: High durability thermo-sensitive paper
Width 58 mm x length 48 m
- Note: If it is to be used for official documents, or stored more than 5 years, it is recommended to make a more durable copy.
- Power supply: 2 power methods
1) AC adapter 100 to 240 V 50/60 Hz AC adapter (6 V, 2 A) as a standard accessory.
2) 4 pcs. of LR6/AA size (alkaline or Ni-Mh)
Note: Manganese dioxide batteries are not usable.
 - Battery life: About 10,000 lines* (if data is printed once every 5 seconds using 1,600 mA NiMH batteries at 20 °C)
* This is a typical value and is not guaranteed.
 - External dimensions: 94 (W) x201 (D) x75.2 (H) mm
 - Mass: 390 g (main unit)

Optional Accessories

- 1) USB cable (A-microB) : **06AFZ050** (1 m)
- 2) RS-232C output cable: **09EAA084** (1 m, D-SUB 9 pin)
- 3) RS-232C counter cable: **09EAA094**
Cable for **KA** counter (1 m, D-SUB 25-pin)
- 4) GO/±NG judgment cable: **965516**
(2 m, 10 pin terminal/separate)
- 5) Foot switch: **937179T**

Consumable Items

Printing paper (10 rolls): **09EAA082**

Statistical calculation data

MODE0

MODE1, 2

- GO/±NG judgment
- N: Number of pieces of data
 - MAX: Maximum value
 - MIN: Minimum value
 - R: Range
 - X: Mean value
 - σn: Standard deviation of a population (N)
 - σn-1: Sample standard deviation (N-1)
 - NG: For the number of pieces of data smaller than the lower limit
 - +NG: For the number of pieces of data larger than the upper limit
 - P: Percentage of rejects
 - Cp: Maximum process capability potential
 - Cpk: Actual process capability achieved

MODE3

- N: Number of pieces of data
- MAX: Maximum value
- MIN: Minimum value
- n: Number of subgroups (up to 10)
- X: Mean value in a subgroup
- R: Range of a subgroup
- X: Mean value
- X-UCL: Upper control limit
- X-LCL: Lower control limit
- R: Center (R control)
- R-UCL: Upper control limit (R control)
- R-LCL: Lower control limit (R control)



Refer to the **DP-1VA LOGGER Brochure (E12041)** for more details.