

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
4 20.77 mm
5 20.27 mm
6 20.26 mm
7 19.31 mm
8 19.64 mm
9 19.93 mm
10 19.30 mm
11 19.56 mm
12 20.85 mm

PART NO.:
DATE 2018/ 2/15
TIME 12: 8

NAME:
* RESULT *
MAX 21.00 mm
MIN 18.99 mm
R 2.01 mm
X 19.9550 mm
σ 0.4501 mm
σn-1 0.4578 mm

-NG 1
+NG 1
P 8.867 %
Cp 0.889
Cpk 0.815

* HISTOGRAM *
LSL 19.11 mm
USL 21.00 mm
TOL 1.89 mm

DIV 1 10

-NG 1
LSL 19.11 mm
USL 21.00 mm
TOL 1.89 mm
    
```

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 MODE2*
*LIMIT DATA 1*
LSL 19.11 mm
USL 21.00 mm
TOL 1.89 mm
LIMIT1 27.22 mm
LIMIT2 28.27 mm

*NEW LIMIT DATA*
*LIMIT DATA 1*
DATE 2018/ 2/17
TIME 14:37

LSL 27.22 mm
USL 28.27 mm
TOL 1.05 mm

L C U
28.08mm | | |
27.87mm | | |
28.14mm | | |
28.01mm | | |
27.72mm | | |
27.41mm | | |
28.97mm | | |
27.12mm | | |
27.72mm | | |
27.58mm | | |
28.14mm | | |
28.22mm | | |
28.45mm | | |
28.45mm | | |
28.00mm | | |

PART NO.:
DATE 2018/ 2/17
TIME 14:38

NAME:
* RESULT *
N 15
MAX 28.45 mm
MIN 26.87 mm
R 1.58 mm
X 27.8582 mm
σ 0.2582 mm
σn-1 0.4270 mm
    
```

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 26.39 mm
2 26.77 mm
3 28.82 mm
4 26.70 mm
5 27.41 mm
6 28.84 mm
7 28.87 mm

X 26.9488 mm
R 4.88 mm

DATE 2018/ 2/17
TIME 14:40

NAME:
SUB GR. NO. 2
1 27.77 mm
2 27.19 mm
3 27.99 mm
4 27.54 mm
5 27.90 mm
6 28.68 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 7
X-UCL 27.6007 mm
X-LCL 26.8009 mm
R-UCL 3.4880 mm
R-LCL 0.2649 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 38.64 mm
10:18:56 37.72 mm
10:17: 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 20.30 mm
4 20.31 mm
5 20.68 mm
6 21.19 mm
7 21.29 mm
8 22.53 mm

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

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

In OUTLOG Setting 3

```

* OUT LOG START *
* LOG # 10

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 19.80 mm
4 2018/ 2/15 10:28:37 18.03 mm
5 2018/ 2/15 10:29:29 20.95 mm

This setting allows printout of data number, measurement value, 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 10×9,999 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 × 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) ×201 (D) ×75.2 (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
 σ: 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.