

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

A

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).



264-505
DP-1VA LOGGER

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 *
LSL 19.11 mm
USL 21.00 mm
TOL 1.89 mm

1 20.14 mm
2 20.16 mm
3 19.89 mm
4 19.77 mm
5 20.27 mm
6 20.28 mm
7 19.31 mm
8 19.64 mm
9 19.53 mm
10 19.50 mm
11 19.59 mm
12 18.22 mm
13 20.92 mm

PART NO.:
DATE 2018/ 2/15
TIME 12: 45

NAME:
* RESULT *
N 30
MAX 20.28 mm
MIN 18.89 mm
R 1.39 mm
σn 0.4501 mm
σn-1 0.4378 mm

*NG/±NG JUDGMENT*
NG 0
±NG 1
Cp 0.888
Cpk 0.815

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

DIV 10
    
```

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*
*LIMIT DATA *
LSL 19.11 mm
USL 21.00 mm
TOL 1.89 mm

LIMIT1 27.22 mm

LIMIT2 26.27 mm

*NEW LIMIT DATA*
*LIMIT DATA *
LSL 20.18 mm
USL 21.00 mm
TOL 0.82 mm

DATE 2018/ 2/17
TIME 13:37

L C U
26.08mm | 1 | 1
27.97mm | 1 | 1
26.14mm | 1 | 1
25.01mm | 1 | 1
27.72mm | 1 | 1
27.47mm | 1 | 1
26.97mm | 1 | 1
27.12mm | 1 | 1
27.72mm | 1 | 1
17.59mm | 1 | 1
27.82mm | 1 | 1
26.14mm | 1 | 1
26.22mm | 1 | 1
26.45mm | 1 | 1
26.45mm | 1 | 1
26.00mm | 1 | 1

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

NAME:
* RESULT *
N 15
MAX 26.86 mm
MIN 16.87 mm
R 9.99 mm
σn 1.68 mm
σn-1 1.59 mm
Cp 0.4194 mm
Cpk 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 25.39 mm
2 26.77 mm
3 26.82 mm
4 25.70 mm
5 27.41 mm
6 23.84 mm
7 26.57 mm

Z 26.3486 mm
PART NO.: 4.99
DATE 2018/ 2/17
TIME 14:40

NAME:
SUB GR. NO. 2
1 27.77 mm
2 27.19 mm
3 27.88 mm
4 27.84 mm
5 27.90 mm
6 26.88 mm
7 26.85 mm

Z 27.7329 mm
PART NO.: 1.99
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-CL 27.0407 mm
S-UCL 26.5009 mm
S-LCL 26.5805 mm
R-CL 6.7251 mm
R-UCL 8.9624 mm
R-LCL 4.4878 mm
    
```

Example of batch printing log data

In OUTLOG Setting 1

```

* OUT LOG START *
LOG 1 10

DATE 2018/ 2/15
10:18:32 37.20 mm
10:18:44 38.52 mm
10:18:56 37.27 mm
10:19: 8 37.27 mm
10:19:08 39.59 mm
10:19:16 37.70 mm
10:19:41 37.69 mm
10:19:16 37.70 mm
10:19:47 37.80 mm
10:20:17 37.28 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 1 10

NAME:
DATE 2018/ 2/15
1 30.41 mm
2 32.57 mm
3 32.05 mm
4 32.19 mm
5 32.19 mm
6 32.19 mm
7 20.33 mm
8 21.28 mm
9 32.05 mm
10 32.05 mm

DATE 2018/ 2/17
TIME 14:40

NAME:
SUB GR. NO. 1
1 27.07 mm
2 27.19 mm
3 27.88 mm
4 27.84 mm
5 27.90 mm
6 26.88 mm
7 26.85 mm

Z 27.7329 mm
PART NO.: 1.99
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-CL 27.0407 mm
S-UCL 26.5009 mm
S-LCL 26.5805 mm
R-CL 6.7251 mm
R-UCL 8.9624 mm
R-LCL 4.4878 mm
    
```

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

In OUTLOG Setting 3

```

* OUT LOG START *
LOG 1 10

1 2018/ 2/15 10:28:28 25.05 mm
2 2018/ 2/15 10:28:31 25.10 mm
3 2018/ 2/15 10:28:33 19.60 mm
4 2018/ 2/15 10:28:37 25.15 mm
5 2018/ 2/15 10:28:28 25.05 mm

DATE 2018/ 2/17
TIME 14:40

NAME:
SUB GR. NO. 1
1 27.07 mm
2 27.19 mm
3 27.88 mm
4 27.84 mm
5 27.90 mm
6 26.88 mm
7 26.85 mm

Z 27.7329 mm
PART NO.: 1.99
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-CL 27.0407 mm
S-UCL 26.5009 mm
S-LCL 26.5805 mm
R-CL 6.7251 mm
R-UCL 8.9624 mm
R-LCL 4.4878 mm
    
```

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

Statistical calculation data

MODE0

- 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

MODE1, 2

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)

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**



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