

Measurement Data Management

Convenient data collection tool and quality control software

Data processing printer for quality control SERIES 264 — Digimatic Mini-Processor DP-1VR

- This is a palm-sized printer used to print measurement data from Digimatic gages or to perform statistical analysis.
- The versatile DP-1VR printer not only prints measurement data, but performs a variety of statistical analyses, draws histograms and D-charts and also performs complex operations on X-bar R control charts.
- Equipped with RS-232C output and GO/NG judgment output as standard functions, this processor delivers the high reliability expected from an advanced quality inspection machine.
- This line thermal printer enables fast and quiet printing.



264-504
DP-1VR



Examples of printout

Mitutoyo

* DP-1VR *

* MODE 1 *

DATE 2002/ 2/27
TIME 10:43

LIMIT DATA 1

LSL	26.44	mm
USL	27.00	mm
TOL	0.56	mm

▲ 1 27.02 mm

▼ 2 26.43 mm

3 26.42 mm

4 26.56 mm

5 26.56 mm

6 26.63 mm

7 26.62 mm

8 26.46 mm

9 26.46 mm

10 26.70 mm

PART NO. :

DATE 2002/ 2/27
TIME 10:43

NAME :

* RESULT *

N	10
MAX	27.02 mm
MIN	26.42 mm
R	0.60 mm
\bar{x}	26.5600 mm
σ_n	0.1673 mm
σ_{n-1}	0.1764 mm

-NG 2

+NG 1

P 30.000

Cp 0.529

Cpk 0.283

* HISTOGRAM *

LSL	26.44	mm
USL	27.00	mm
TOL	0.56	mm

DIV 10

-NG 2 00

+NG 1 00

A 2 00

B 2 00

C 2 00

D 2 00

E 2 00

F 2 00

G 2 00

H 2 00

I 2 00

J 2 00

K 2 00

L 2 00

M 2 00

N 2 00

O 2 00

P 2 00

Q 2 00

R 2 00

S 2 00

T 2 00

U 2 00

V 2 00

W 2 00

X 2 00

Y 2 00

Z 2 00

0 1

1 0

2 00

3 00

4 00

5 00

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7 00

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97 00

98 00

99 00

100 00

Mitutoyo

* DP-1VR *

* MODE 2 *

DATE 2002/ 2/27
TIME 10:44

LIMIT MODE

LIMIT DATA 1

NO LIMIT DATA

LIMIT1 26.86 mm

LIMIT2 27.44 mm

NEW LIMIT DATA

LIMIT DATA 1

DATE 2002/ 2/27
TIME 10:44

LSL 26.86 mm

USL 27.44 mm

TOL 0.58 mm

L 27.41 mm

G 27.31 mm

U 27.51 mm

27.35 mm

27.07 mm

27.09 mm

27.14 mm

27.14 mm

27.14 mm

27.35 mm

27.42 mm

27.47 mm

27.49 mm

27.49 mm

PART NO. :

DATE 2002/ 2/27
TIME 10:44

NAME :

* RESULT *

Mitutoyo

* DP-1VR *

* MODE 3 *

DATE 2002/ 2/27
TIME 10:45

SUB GR. NO. 1

1	27.54	mm
2	28.30	mm
3	27.71	mm
4	28.55	mm
5	27.43	mm
6	27.94	mm
7	27.27	mm

X 27.7914 mm

R 1.08 mm

PART NO. :

DATE 2002/ 2/27
TIME 10:45

NAME :

SUB GR. NO. 2

1	28.23	mm
2	28.07	mm
3	28.66	mm
4	29.20	mm
5	29.59	mm
6	30.11	mm
7	30.78	mm

\bar{x} 29.2343 mm

R 2.71 mm

PART NO. :

DATE 2002/ 2/27
TIME 10:45

NAME :

CONTROL LIMIT

DATE 2002/ 2/27
TIME 10:45

NO. OF SUB GR. 2

SAMPLE SIZE

\bar{x}	28.5129	mm
\bar{x} -UCL	29.3069	mm
\bar{x} -LCL	27.7189	mm
R	1.8950	mm
R-UCL	3.6450	mm
R-LCL	3.6450	mm

Statistical calculations

Mode 0

GO/NG judgment

Modes 1,2

N : Number of data
MAX : Maximum value
MIN : Minimum value
R : Range
 \bar{x} : Average value
 σ_n : Standard deviation of the sample (N)
 σ_{n-1} : Sample standard deviation (N-1)
-NG : Number of data smaller than lower limit value
+NG : Number of data larger than upper limit value
P : Fraction defective
Cp : Process capability index
Cpk : Process capability index (process target centered)

Mode 3

N : Number of data
MAX : Maximum value
MIN : Minimum value
n : Number of subgroup (Max. 10)
 \bar{x} : Average value of subgroup
R : Range of subgroup
 \bar{x} : Mean value
 \bar{x} -UCL : Upper control limit
R : Mean (R control)
R-UCL : Upper control limit (R control)
R-LCL : Lower control limit (R control)

Specifications

- Order No.: 264-504
- Model: DP-1VR
- Data processing capacity:
Mode 0: 10000 data items
Modes 1,2: 9999 data items
Mode 3: Sample size (10 x subgroup 9999=99990 data)
Upper/lower limit value 5 pairs can be held in memory
- Output : (1) RS-232C output (level TTL)
function (2) GO/NG judgment output (+NG, GO, -NG)
- Input timer: Input intervals
0.25s, 1s, 5s, 30s, 1min, 30min, 60min
- Printing method: Thermal line printer 384 dots/char
- Character specification: Normal character 24 x 16 dots
Large character 36 x 24 dots
- Printing speed: 0.5s per line (using AC adapter)
- Printing line: 10000 lines of normal characters per roll
7000 lines of large characters per roll
- Printing paper: High durability thermo-sensitive paper
Width 58mm x length 48m

Note: Printed characters do not fade if a printout is stored in a cool dark place, but if it is to be used for official documents, or stored more than 5 years, it is recommended that a copy be made.

- Power supply: 2 power methods
(1) AC adapter 100V (6VDC, 1000mA) supplied as a standard accessory.
(2) 4pcs. of LR6/AA size (alkaline or Ni-Mh)
- Battery life: 10000 lines (5s/line using a 1600mAh Ni-Mh battery)
Note: This is a typical value and is not guaranteed.
- External dimensions: 94 (W) x 201 (D) x 75.2 (H) mm
- Mass: 390g (main unit)
- Optional Accessories:
(1) RS-232C changing cable
For connection with a PC
Cable length 1m, D-sub 9 pin
(2) RS-232C counter cable
For connection with KA counter
Cable length 1m, D-sub 25 pin
(3) GO/NG judgment cable
Cable length 2m, D-sub 10 pin terminal/separate wires
(4) Foot switch
- Consumable items:
Printing paper (10 rolls)

RS-232C communication specification (Output specification)

- Output signal level: TTL
- Communication method: Half-duplex
- Communication speed: 1200/2400/4800/9600/19200
- Bit configuration: Start bit 1 bit
Data length: 7/8 bit
Parity check: Even/odd/none
Stop bit: 2 bit
- Data format

When data output

Number of bytes	1	2	3	4	5	6	7	8	9	10	11	12	13
Data	0	1	A	Model	MSD							LSD	CR

Data parts (Floating decimal point)
Model: + or -
Measurement item
Channel No.
Code No.

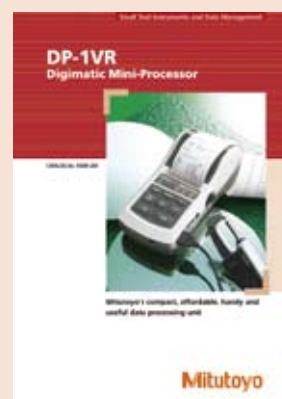
Example of format
Display of a Digimatic gage Output data
0.123 01A+0000.123CR

Error code

Number of bytes	1	2	3	4
Data	9	1	Error code	CR

Error code: 1 (No data input)
2 (Loaded data with the format other than specified)
9 (System error head temperature error, overflow, power supply voltage error, head up, paper error)

Channel No.
Error format



Refer to the DP-1VR leaflet (E4209) for more details.