Mini-Printer Equipped with Data Logging Function
Digimatic Mini-Processor DP-1VA LOGGER
Using real-time measurement data directly from a Digimatic-output measuring tool, the high performance DP-1VA LOGGER performs complex statistical calculations such as those needed for Xbar-R control charts, histograms and D-charts. The data logger function also 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. The DP-1VA LOGGER is the result of the pursuit of excellent portability and flexibility in the 2-way power supply system, and provides significant potential for efficiency improvements in the quality control function.

“d2” is the generic name for Mitutoyo Digimatic output compatible with up to 8 digits of I/O data.
The combination of USB-ITPAK V2.1 and MeasurLink allows the processor to register/automate the Excel input procedure and display statistical processing results such as a control chart in real time.

Data input to a custom inspection sheet created by Mitutoyo-specific application software or Excel

Equipped with the data logger function able to store up to 1000 pieces of measurement data.

Batch output of logging data by connecting the processor to a PC.
Clock function
Allows printing of CE year, month, day, hour and minute.

GO/±NG judgment lamps
- NG: Indicates measurement result is smaller than the lower limit
- GO: Indicates measurement result is within the tolerance limits
+ NG: Indicates measurement result is larger than the upper limit
Five sets of GO/±NG judgments can be set.

USB micro-connector
Allows transmission of measurement data to Excel, etc., by connecting the processor to a PC with a USB cable (option). (Both real-time data transmission upon measurement and batch transmission of logging data are possible.)

Large and easy-to-operate keys

[POWER] key
Press to turn power on/off.

[PRINTER] key
Press to turn on/off the print function for measurement and data logging.

[TOL.|REC/STOP] key
Press briefly to enter/exit the setting mode for limit data (upper/lower tolerance). Press longer to start/stop data logging.

[CLEAR] key
Press to clear all measurement data.

[CANCEL] key
Press to cancel the most recently input measurement data. Press longer than 10 seconds to reset hardware, clear measurement data/log data, and initialize the current date and time.

[DATA] key
Executes data output.

[FEED] key
Press and hold to feed printer paper.

[STAT.|OUT LOG] key
Press to perform statistical calculation based on all input measurement data and create a histogram by printing calculation results. Press longer than usual to print and USB-output log data.
48m printer paper
(highly-durable thermosensitive paper)
Excellent environmental resistance allows prolonged storage.
• Standard characters: About 10,000 lines per roll
• Enlarged characters: About 7,000 lines per roll

One-touch paper loading
Thermosensitive paper:
Standard accessory (1 roll)
• Order No. 09EAA082

2-way power system
Allows the AC adapter (standard accessory) and AA alkaline batteries (LR6) or nickel-metal-hydride batteries to be used. The battery compartment is located at the rear of the main unit.

Data output connector
Outputs measurement data and GO/NG judgment results in RS-232C format at TTL voltage levels.

Output via RS-232C
Data description
- Measurement data
- Error message

PC
Note: Appropriate communication software is required separately.

RS-232C output cable (optional accessory)
- Cable for PC with D-SUB 9-pin connector
- Cable length 1m
  • Order No. 09EAA084

GO/NG judgment result output (open collector output)
NG lamp or buzzer

3-way judgment (+NG, GO, -NG) indication device, etc.

RS-232C output cable (optional accessory)
- 10P terminal for discrete wiring
- Cable length 2m
  • Order No. 965516

Data input connector
Connects a cable from a Digimatic measuring tool.

Foot switch connector
Connects the foot switch (option) for executing data output in place of the DATA switch.

Timer input
Data from a measuring tool can be automatically input at a certain interval (0.25 sec, 1 sec, 5 sec, 30 sec, 1 min, 30 min, 60 min), allowing automatic recording and logging of measurement data.

Data from a measuring tool can be automatically input at a certain interval (0.25 sec, 1 sec, 5 sec, 30 sec, 1 min, 30 min, 60 min), allowing automatic recording and logging of measurement data.

Continuous measurement

Strap attachment
Connects a cable from a Digimatic measuring tool.

Connects the foot switch (option) for executing data output in place of the DATA switch.
**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.

**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.*

**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.

**Example of batch printing log data**

<table>
<thead>
<tr>
<th>OUT LOG Setting 1</th>
<th>OUT LOG Setting 2</th>
<th>OUT LOG Setting 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE 2018/2/15</td>
<td>DATE 2018/2/15</td>
<td>DATE 2018/2/15</td>
</tr>
<tr>
<td>37.20 mm</td>
<td>37.84 mm</td>
<td>37.72 mm</td>
</tr>
<tr>
<td>10:18:32</td>
<td>10:18:34</td>
<td>10:18:34</td>
</tr>
<tr>
<td>36.89 mm</td>
<td>37.22 mm</td>
<td>37.27 mm</td>
</tr>
<tr>
<td>10:18:32</td>
<td>10:18:34</td>
<td>10:18:34</td>
</tr>
<tr>
<td>37.50 mm</td>
<td>37.77 mm</td>
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<td>10:18:34</td>
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<tr>
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<td>37.84 mm</td>
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<td>10:18:34</td>
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<tr>
<td>37.42 mm</td>
<td>37.62 mm</td>
<td>37.62 mm</td>
</tr>
<tr>
<td>10:18:32</td>
<td>10:18:34</td>
<td>10:18:34</td>
</tr>
<tr>
<td>37.44 mm</td>
<td>37.64 mm</td>
<td>37.64 mm</td>
</tr>
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<td>10:18:34</td>
<td>10:18:34</td>
</tr>
<tr>
<td>37.46 mm</td>
<td>37.66 mm</td>
<td>37.66 mm</td>
</tr>
<tr>
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<td>10:18:34</td>
<td>10:18:34</td>
</tr>
<tr>
<td>37.48 mm</td>
<td>37.68 mm</td>
<td>37.68 mm</td>
</tr>
<tr>
<td>10:18:32</td>
<td>10:18:34</td>
<td>10:18:34</td>
</tr>
<tr>
<td>37.50 mm</td>
<td>37.70 mm</td>
<td>37.70 mm</td>
</tr>
<tr>
<td>10:18:32</td>
<td>10:18:34</td>
<td>10:18:34</td>
</tr>
<tr>
<td>37.52 mm</td>
<td>37.72 mm</td>
<td>37.72 mm</td>
</tr>
</tbody>
</table>

### 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**
- 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.*

**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.

**GO/NG judgment**
- N: Number of pieces of data
- MAX: Maximum value
- MIN: Minimum value
- R: Range
- X: Mean value
- n: Standard deviation of a population (N)
- N~: 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
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Order No.</th>
<th>264-505*1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data input</td>
<td>Digimatic input, Digimatic 2 input, RS-232C input (specific to Mitutoyo KA counter)</td>
</tr>
<tr>
<td>Printing method</td>
<td>Thermal line printer</td>
</tr>
</tbody>
</table>
| Character specification | Total number of dots: 384 dots/line
  Dot size: 8 dots/mm |
| Printing speed | 0.8s per line (6.5mm/s) |
| Printing paper*2 | High durability thermo-sensitive paper
  Width 38mm x length 48mm |
| Power supply | 2-way power supply system
  1. 100-240V 50/60Hz AC adapter (6V, 2A)
  2. AA alkaline battery (LR6) or nickel-metal-hydride battery (NiMH Size AA) 4 pieces
  (Manganese dioxide batteries are not usable.) |
| Battery life*3 | About 10,000 lines (if data is printed once every 5 seconds using 1,600mA NiMH batteries at 20°C) |
| Data processing capacity | MODE0: 100,000 pieces of data
  MODE1, MODE2: 9,999 pieces of data
  MODE3: Sample size 10 x 9999 subgroups = 99,990 pieces of data
  GO±NG judgment (five sets can be defined) |
| Tolerance judgment | Five sets can be set |
| Measurement data logging (storage) | Up to 1,000 pieces |
| Input timer | 0.25s, 1s, 5s, 30s, 1 min, 30min, 60min |
| Output | USB output
  RS-232C data output at TTL levels
  GO±NG judgment result output (−NG, GO, +NG) |
| Clock accuracy | Maximum time difference per month: ±2 minutes |
| Operating temperature | 0 to 45°C (using AC adapter)
  10 to 45°C (using battery) |
| Storage temperature | -10 to 50°C |
| Mass | 390g (main unit) |
| External dimensions | 94 (W) x 201 (D) x 75.2 (H) mm |
| Standard accessories | AC adapter: 06AG180, printing paper (one roll), strap, user’s manual |
| Optional accessories | 1. USB cable (A-microB): 06AFZ050 (1m)
  2. RS-232C output cable: 09EAA084 (1m, D-SUB 9 pin)
  3. GO ±NG judgment cable: 965516 (2m, 10 pin terminal/separate)
  4. Foot switch: 937179T (2m) |
| Consumable items | Printing paper (10 rolls) |

*1: To denote your AC line voltage add the following suffixes. A for North America, D for Europe, E for UK, K for Korea, DC for China, B for Oceania without AC adapter and no suffix is required for Japan.

*2: The printer paper has excellent environmental and chemical resistance, but it has limitations in durability due to thermosensitivity. If recorded paper is stored for more than 5 years, or used as a public document, it is recommended to make a more durable copy.

*3: The battery life quoted is not a guaranteed value, but only a typical value.

**Measurement Data Collection Software (optional)**

**Excel-specific Measurement Data Collection Software USB-ITPAK V2.1 (06AFM386)**

This software allows efficiency improvements in inspection tasks that include repetitive work by automating input operations to Excel.

**Measurement Data Collection/Statistical Analysis Software MeasurLink Real-Time Standard (64AAB606)**

This software visualizes statistical processing such as a control chart and process capability index in real time, thus achieving "Quality Visualization."
Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.

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www.mitutoyo.com

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