GENERAL
The Report Package provides functions to periodically acquire values held in control objects that reside in a data server inside Versatile Data Server Software (VDS) system, store those values to an indexed sequential access method (ISAM) file, generate reports of an Excel sheet based on the acquired values, and print them.

The Report Package can tabulate and process the acquired data when storing it to a data file to allow efficient generation of daily, monthly, lot, and simple batch reports.

- Assigning objects
- Setting recording intervals
- Setting tabulation processes
- Setting closing (summarization) processes
- Setting actions
- Setting database
- etc.

SYSTEM REQUIREMENTS
The system requirements follow those required for VDS specified in VDS Versatile Database Server Software, GS 34P02A02-01E.

As necessary, the following needs to be prepared.
- To create report formats, you need Microsoft Excel.
  - Windows 10 (IoT) Enterprise 2019 LTSC: Microsoft Excel 2019 32-bit versions
  - Windows 10 (IoT) Enterprise 2016 LTSB: Microsoft Excel 2016 32-bit versions
  - Windows 10 Pro: Microsoft Excel 2016 32-bit versions
  - Windows 7: Microsoft Excel 2013 SP1 32-bit versions or Microsoft Excel 2016 32-bit versions
## GENERAL SPECIFICATIONS

### Table Specifications (1/2)

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data acquisition and recording</td>
<td></td>
</tr>
</tbody>
</table>
| Report types | Daily report  
Monthly report  
Daily and monthly report  
Lot report  
Simple batch report |
| Acquisition blocks | Up to 32 blocks of the report types above. (*1) |
| Settings of data items to be acquired | Up to 32 data items per acquisition block |
| Acquisition interval (*2) | Daily report and lot report: Selectable from 1, 2, 5, 10, 30, and 60 minutes.  
Monthly report: Selectable from 30, 60, and 120 minutes. |
| Data simultaneity | Guaranteed within the same block |
| Recording interval | Daily report and lot report: Selectable from 5, 10, 20, 30, 60 and 120 minutes.  
Monthly report: Fixed to 1 day. |
| Tabulation at recording (*3) | Daily report, monthly report, and lot report:  
Maximums, minimums, averages, totals, differential totals, tabulation status, snapshot values  
Batch report:  
Instantaneous values at the batch end.  
Differences of the respective values from the batch start to the end. |
| Closing (summarization) time | Daily report and simple batch report:  
00:00:00 by default; can be changed by 1-hour increments.  
Monthly report:  
00:00:00 on the first day of every month by default; the day can be changed to a desired fixed day, and the time by 1-hour increments. |
| Tabulation at closing (summarization) | Tabulation of recorded values:  
Maximums, minimums, averages, totals, and differential totals  
Tabulation of measured values:  
Maximum snapshot values, minimum snapshot values, average snapshot values, times of maximum snapshot values, times of minimum snapshot values, ratio of normal values acquired |
| Data type of acquired data (*4) | Double (double-precision integer) |
| Acquisition condition properties | The property Cv of a DI object can be specified. |
| Recording start and end condition | Lot report:  
Specify the property Cv of a DI object.  
Specify the method.  
Simple batch report:  
Specify the property Cv of a DI object.  
Specify the method.  
Specify the closing (summarization) time. |
| Batch start and end condition | Specify the property Cv of a DI object.  
Specify the method. |
| Answerback | Specify the property Cv of a DI object. |

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*1: The total of lot reports and simple batch reports cannot exceed 4.
*2: For a monthly report, data can be created based on the data recorded for daily reports.
*3: If the acquisition interval is the same as the recording interval, snapshot values are recorded.
*4: Each tabulation status is a single character, and the time of a maximum value is a character string (the same for the time of a minimum value).
### Table Specifications (2/2)

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data files</strong></td>
<td></td>
</tr>
<tr>
<td>ISAM</td>
<td></td>
</tr>
<tr>
<td>Files and acquisition blocks</td>
<td>Correspond one-to-one to each other.</td>
</tr>
<tr>
<td>Record storage periods (*5)</td>
<td>Daily report:</td>
</tr>
<tr>
<td></td>
<td>Stored until the daily closing (summarization) time on the next day after the same date in the next year.</td>
</tr>
<tr>
<td></td>
<td>Monthly report:</td>
</tr>
<tr>
<td></td>
<td>Stored until the monthly closing (summarization) time in the next month after the same month in the next year.</td>
</tr>
<tr>
<td></td>
<td>Lot report and simple batch report:</td>
</tr>
<tr>
<td></td>
<td>Stored until 00:00:00 on the next day after the same date in the next month.</td>
</tr>
<tr>
<td>Indexes</td>
<td>Data records' (lines') properties, report names, and times (year/month/day/time) are indexed.</td>
</tr>
<tr>
<td></td>
<td>The user can additionally index up to 5 data fields (rows).</td>
</tr>
</tbody>
</table>

| **Report printing** (*6) |                                                     |
| Print blocks and acquisition blocks | Correspond one-to-one to each other.              |
| Auto-printing               | Specify the delay time in minutes (cannot be specified for a lot report or simple batch report).  |
| Formats                     | Specify for each report (for each acquisition block) using a template.  |
| Saving of report blocks     | Possible                                             |
| Print block macros          | Non-protected, disclosed                            |
| Applicable data file types  | ISAM                                                 |

*5: The oldest data is overwritten by the latest data.
*6: Only 97-2003 file format can be used.
# REPORT FORMAT EXAMPLES

- **Daily Report**

  Data in specified intervals for a day is tabulated for a report.

**Settings**

- **Closing (summarization) time:** 0:00; recording interval: 60 minutes

  Tabulation at closing (summarization): Computing the maximum, minimum, and average for each data field.

**Recording start time:**

- Can be changed by modifying the closing (summarization) time.

**Data items:**

- Up to 32

**You can modify a template provided with the Report Package to specify the borders, data names, cell sizes, and font sizes as desired.**

**Recorded data:**

- Maximums, minimums, totals, and averages can be specified in addition to snapshot values.

**Data computed by tabulation at closing (summarization):**

- Totals, the maximum snapshot values, and times of the maximum snapshot values can also be specified in addition to these.

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<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>2:00</td>
<td>123.4</td>
<td>568.2</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>3:00</td>
<td>124.7</td>
<td>567.8</td>
<td>124.7</td>
<td>98.7</td>
<td>98.7</td>
<td>260.5</td>
</tr>
<tr>
<td>4:00</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>5:00</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22:00</td>
<td>123.4</td>
<td>566.9</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>23:00</td>
<td>122.1</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>0:00</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>255.6</td>
</tr>
</tbody>
</table>

**Maximum:** 124.7 568.2 123.4 98.7 98.7 260.5 123.5

**Minimum:** 122.1 566.9 123.4 98.7 98.7 255.6 123.3

**Average:** 123.4 567.4 123.5 98.7 98.7 258.1 123.4

**Recording interval:**

- Selectable from 5, 10, 20, 30, 60, and 120 minutes.
### Monthly Report

Daily data for a month is tabulated for a report.

**Settings**

- **Closing (summarization) day:** End of every month; recording interval: Fixed to 1 day
- **Tabulation at closing (summarization):** Computing the maximum, minimum, and average for each data field
- **Report name:** Preceding day/month

**Recording interval:** Fixed to 1 day.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>l/h</td>
<td>g/cm³</td>
<td>l/h</td>
<td>°C</td>
<td>°C</td>
<td>l/h</td>
<td>l/h</td>
</tr>
<tr>
<td>1</td>
<td>123.4</td>
<td>567.9</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>2</td>
<td>123.4</td>
<td>568.2</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.4</td>
</tr>
<tr>
<td>3</td>
<td>124.7</td>
<td>567.8</td>
<td>124.7</td>
<td>98.7</td>
<td>98.7</td>
<td>260.5</td>
</tr>
<tr>
<td>4</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>5</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>29</td>
<td>123.4</td>
<td>566.9</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>30</td>
<td>122.1</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>31</td>
<td>123.4</td>
<td>567.9</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>255.6</td>
</tr>
</tbody>
</table>

**Maximum:**
- Row Brackish Water Flow: 124.7
- Row Brackish Water Sp. Wgt: 568.2
- Row Material Tank Feed Flow: 124.7
- Heat Intake Temp.: 98.7
- Heat Exhaust Temp.: 98.7
- Topper Feed Flow: 260.5
- Steam Header Flow: 123.5

**Minimum:**
- Row Brackish Water Flow: 122.1
- Row Brackish Water Sp. Wgt: 566.9
- Row Material Tank Feed Flow: 123.4
- Heat Intake Temp.: 98.7
- Heat Exhaust Temp.: 98.7
- Topper Feed Flow: 255.6
- Steam Header Flow: 123.3

**Average:**
- Row Brackish Water Flow: 123.4
- Row Brackish Water Sp. Wgt: 567.4
- Row Material Tank Feed Flow: 123.5
- Heat Intake Temp.: 98.7
- Heat Exhaust Temp.: 98.7
- Topper Feed Flow: 258.1
- Steam Header Flow: 123.4

You can modify a template provided with the Report Package to specify the borders, data names, cell sizes, and font sizes as desired.

Recorded data:
- Maximums, minimums, totals, and averages can be specified in addition to snapshot values.

Data computed by tabulation at closing (summarization):
- Totals, the maximum snapshot values, and times of the maximum snapshot values can also be specified in addition to these.
Lot Report

Data in specified intervals over the period between the specified start and end times is tabulated for a report. (The data records, however, cannot exceed 512.)

Settings

- Time when start conditions were met: 8:24
- Time when end conditions were met: 10:47
- Closing (summarization) method: Polling; recording interval: 30 minutes
- Tabulation at closing (summarization): Computing the maximum, minimum, and average for each data field

Recording interval:
Selectable from 5, 10, 20, 30, 60, and 120 minutes.

Data items:
Up to 32

| Data as at the lot end is also recorded in addition to the periodic-interval data. |

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>123.4</td>
<td>567.2</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>268.1</td>
</tr>
<tr>
<td>9:00</td>
<td>123.4</td>
<td>568.2</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>268.1</td>
</tr>
<tr>
<td>9:30</td>
<td>124.7</td>
<td>567.8</td>
<td>124.7</td>
<td>98.7</td>
<td>98.7</td>
<td>260.5</td>
</tr>
<tr>
<td>10:00</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>10:30</td>
<td>123.4</td>
<td>567.8</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
<tr>
<td>10:47</td>
<td>123.4</td>
<td>566.9</td>
<td>123.4</td>
<td>98.7</td>
<td>98.7</td>
<td>258.1</td>
</tr>
</tbody>
</table>

- Maximum
  - 124.7
  - 568.2
  - 124.7
  - 98.7
  - 98.7
  - 268.1
  - 123.5

- Minimum
  - 122.1
  - 566.9
  - 123.4
  - 98.7
  - 98.7
  - 255.6
  - 123.3

- Average
  - 123.4
  - 567.4
  - 123.5
  - 98.7
  - 98.7
  - 258.1
  - 123.4

You can modify a template provided with the Report Package to specify the borders, data names, cell sizes, and font sizes as desired.

Recorded data:
- Maximums, minimums, totals, and averages can be specified in addition to snapshot values.
- Data computed by tabulation at closing (summarization):
  - Totals, the maximum snapshot values, and times of the maximum snapshot values can also be specified in addition to these.

A report of a special time interval, such as a shift report for every 8-hour shift, can be generated by using a lot report.
Simple Batch Report

Data for batches occurring within the period between the specified start and end times is tabulated for a report. (The data records, however, cannot exceed 512.) Batch data to be recorded are the batch start and end times, snapshot values at each batch end or difference of each value from the batch start to the end.

Settings

Recording start and end conditions: Polling (on/off of a DI)
Batch start and end conditions: Polling (on/off of a DI)
Tabulation at closing (summarization): Recording the snapshot value for each data field

(Shown at the bottom is a printout example provided that the recording start/end and batch start/end conditions were met as shown below.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10/10 10:10</td>
<td>10/10 16:23</td>
<td>567.8 l/h</td>
<td>123.4 °C</td>
<td>98.7 °C</td>
<td>98.7 °C</td>
<td>258.1 l/h</td>
<td>123.4 °C</td>
</tr>
<tr>
<td>10/10 18:03</td>
<td>10/10 22:42</td>
<td>568.2 l/h</td>
<td>123.4 °C</td>
<td>98.7 °C</td>
<td>98.7 °C</td>
<td>258.1 l/h</td>
<td>123.4 °C</td>
</tr>
<tr>
<td>10/10 23:26</td>
<td>10/11 5:54</td>
<td>567.8 l/h</td>
<td>124.7 °C</td>
<td>98.7 °C</td>
<td>98.7 °C</td>
<td>260.5 l/h</td>
<td>123.4 °C</td>
</tr>
</tbody>
</table>

You can modify a template provided with the Report Package to specify the borders, data names, cell sizes, and font sizes as desired.

Recorded data: Snapshot values as at each batch end or differences in values between the start and end of each batch.

MODEL AND SUFFIX CODES

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT301AJ</td>
<td>-LW11A</td>
<td>Fulltime Report Package</td>
</tr>
<tr>
<td>NT301RJ</td>
<td>-LW11A</td>
<td>Runtime Report Package</td>
</tr>
</tbody>
</table>

ORDERING INFORMATION

Specify the model and suffix codes.

RELATED DOCUMENT

• VDS, GS 34P02A02-01E

TRADEMARK ACKNOWLEDGMENTS

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