

HNS SPC

Statistical process and quality control

HNS DataConnect



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2009 March 31

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DataConnect to receive measured samples (SPC or MDC)

HNS SPC program can receive measured values from external data sources or measuring programs. Receiving of data is happened automatically by HNS DataConnect.

DataConnect interface supports using binary and text files. Present program version supports binary DataConnect files because of compatibility, but it is suggested to use text files - see as follows - by building a new connection.

External data sources and measuring programs can record data in text files with extension **SPC** or **MDC** which are in a defined directory. SPC program loads these files automatically and records data in the database.

DataConnect file contains external measured values, sample ID's and other data in following order. One row contains one measured value.

- | | |
|--------------------------------|--|
| 1. Workgroup ID (code) | (maximum 10 characters). |
| 2. Machine ID (code) | (maximum 10 characters). |
| 3. Head ID (number) | (number 1 - 250, 0 means no head identification). |
| 4. Position ID (number) | (number 1 - 250, 0 means no position identification). |
| 5. Product ID (code) | (maximum 16 characters). |
| 6. Parameter ID (name) | (name in 1 st language, maximum 20 characters). |
| 7. Measured value | (decimal marked with '.' or ','). |
| 8. Date | (in format yyyy.mm.dd or mm-dd-yy). |
| 9. Time | (in format hh:mm[:ss]). |
| 10. User ID | (optional, maximum 9 characters). |
| 11. Mask ID | (optional, maximum 16 characters). |
| 12. Shift ID | (optional, maximum 3 characters). |
| 13. Team ID | (optional, maximum 16 characters). |
| 14. Text comment | (optional, maximum 120 characters). |

Fields in a row had to be separated with ',' or with ';' (',' or ';' characters are not allowed in the fields). See also DataConnect settings.

Date format can be *mm-dd-yy* and *yyyy.mm.dd*. Both of them can stand in one file, program identifies date format automatically.

In a DataConnect file there can stand empty rows to separate measured values and also comment rows. First character of a comment row (comment text, not to be processed) is '*'.

DataConnect file can contain text comment also by samples, in the last field of a row. Length of a comment can be maximum 120 characters. If a comment is longer, than 120 characters, program records only first 120 characters, and deletes the end of the comment.

Attention!

This comment is not the same as the comment (comment row) in previous section. This comment is useful, to be processed and recorded to the sample.

Content of the 10th - 14th fields are recorded with samples in SPC database together, using these fields is optional, but the place of not-used fields, which are not the last in the row, must be marked because of processing, for example: ... *xy,,l,,szerszámcsere* .

DataConnect file can contain text comment by measuring, in the last field of a row. These comments will be linked, separated with ',' and recorded to the sample. Length of a comment related to a sample can be maximum 120 characters. If a comment is longer, than 120 characters, program records only first 120 characters, and deletes the end of the comment.

DataConnect file contains measured values in order, apart from each other. SPC program orders measured values in samples by the order of ID's and measured values belonging to the same ID.

External data source has to ensure that number of forwarded measured values meets to sample size that is defined in SPC program, and measured values stand in chronological order.

Loaded and successful processed samples are deleted from DataConnect file by SPC program.

DataConnect settings can be found in SPC program in *HNS DataConnection* menu item in *Settings* menu. See in *User manual*.

Different DataConnect file examples can be seen as follows.

DataConnect file to forwarding only basic data - primary date format, sample size is 5 related to both parameters - :

```
LN#1,OKUMA,0,0,Pin,Length,100.52,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.55,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.46,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.50,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.49,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.002,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,4.998,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.006,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.001,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,4.996,2001.06.01,14:43,,,,,
```

Measured values belonging to a sample can be stand in optional order. This file and the other above are the same to processing.

```
LN#1,OKUMA,0,0,Pin,Length,100.52,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.002,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.55,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,4.998,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.46,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.006,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.50,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.001,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.49,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,4.996,2001.06.01,14:43,,,,,
```

DataConnect file to forwarding measured samples with sample ID's - primary date format, sample size is 5 related to both parameters - :

```
LN#1,OKUMA,0,0,Pin,Length,100.52,2001.06.01,14:43,KISS,100001,A01,1,tool change
LN#1,OKUMA,0,0,Pin,Length,100.55,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.46,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.50,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.49,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.002,2001.06.01,14:43,KISS,100001,A01,1,tool change
LN#1,OKUMA,0,0,Pin,Diameter,4.998,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.006,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.001,2001.06.01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,4.996,2001.06.01,14:43,,,,,
```

DataConnect file to forwarding measured samples with sample ID's - secondary date format, sample size is 5 related to both parameters - :

```
LN#1,OKUMA,0,0,Pin,Length,100.52,06-01-01,14:43,KISS,100001,A01,1,tool change
LN#1,OKUMA,0,0,Pin,Length,100.55,06-01-01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.46,06-01-01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.50,06-01-01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Length,100.49,06-01-01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.002,06-01-01,14:43,KISS,100001,A01,1,tool change
LN#1,OKUMA,0,0,Pin,Diameter,4.998,06-01-01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.006,06-01-01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,5.001,06-01-01,14:43,,,,,
LN#1,OKUMA,0,0,Pin,Diameter,4.996,06-01-01,14:43,,,,,
```

DataConnect file to forwarding measured samples to head - data from 17th head, sample size is 5 - :

```
LN#1,OKUMA,17,0,Pin,Length,100.52,06-01-01,14:43,KISS,100001,A01,1,tool change
LN#1,OKUMA,17,0,Pin,Length,100.55,06-01-01,14:43,,,,,
LN#1,OKUMA,17,0,Pin,Length,100.46,06-01-01,14:43,,,,,
LN#1,OKUMA,17,0,Pin,Length,100.50,06-01-01,14:43,,,,,
LN#1,OKUMA,17,0,Pin,Length,100.49,06-01-01,14:43,,,,,
```

DataConnect file to forwarding measured samples to position - data from 5th position, sample size is 5 - :

```
LN#1,OKUMA,0,5,Tengely,Length,100.52,06-01-01,14:43,KISS,100001,A01,1,tool change
LN#1,OKUMA,0,5,Tengely,Length,100.55,06-01-01,14:43,,,,,
LN#1,OKUMA,0,5,Tengely,Length,100.46,06-01-01,14:43,,,,,
LN#1,OKUMA,0,5,Tengely,Length,100.50,06-01-01,14:43,,,,,
LN#1,OKUMA,0,5,Tengely,Length,100.49,06-01-01,14:43,,,,,
```

DataConnect to receive attributed samples (ADC)

HNS SPC program can receive attributed data (yes / no) from external data sources. Receiving of data is happened automatically by HNS DataConnect.

DataConnect interface supports using only text files in case of attributed data.

External data sources can record data in text files with extension **ADC** which are in a defined directory. SPC program loads these files automatically and records data in the database.

DataConnect file contains external attributed data, sample ID's and other data in following order. One row contains the result of one lot labelling.

- | | |
|--|---|
| 1. Workgroup ID (code) | (maximum 10 characters). |
| 2. Machine ID (code) | (maximum 10 characters). |
| 3. Head ID (number) | (number 1 - 250, 0 means no head identification). |
| 4. Position ID (number) | (number 1 - 250, 0 means no position identification). |
| 5. Product ID (code) | (maximum 16 characters). |
| 6. Failure group ID (code) | (maximum 10 characters). |
| 7. Date | (in format yyyy.mm.dd or mm-dd-yy). |
| 8. Time | (in format hh:mm[:ss]). |
| 9. User ID | (optional, maximum 9 characters). |
| 10. Mask ID | (optional, maximum 16 characters). |
| 11. Shift ID | (optional, maximum 3 characters). |
| 12. Team ID | (optional, maximum 16 characters). |
| 13. Number of inspected parts (sample size) | (number 1 - 65.000). |
| 14. Number of defected parts | (number \leq number of inspected parts). |
| 15. Occurrence of 1st failure | (number \leq number of inspected parts). |
| 16. Occurrence of 2nd failure | (number \leq number of inspected parts). |
| 17. Occurrence of 3rd failure | (number \leq number of inspected parts). |
| 18. ... | |
| 19. Occurrence of 100th failure | (number \leq number of inspected parts). |

Fields in a row had to be separated with ',' or with ':' (';' or ':' characters are not allowed in the fields). See also DataConnect settings.

15th and following fields have to be filled only for inspected failures. Program automatically counts 0 related to further failures which are not given (this failure did not occur in given sample). 9th - 12th fields have to be marked because of processing, but these can be empty, for example: ...12:35,,,,, 120,5,...

In a DataConnect file there can stand empty rows to separate measured values and also comment rows. First character of a comment row (comment text, not to processing) is '*'.

Content of the 9th - 12th fields are recorded with samples in SPC database together, using these fields is optional.

Loaded and successful processed samples are deleted from DataConnect file by SPC program.

DataConnect settings can be found in SPC program in *HNS DataConnection* menu item in *Settings* menu. See in *User manual*. These settings apply for measured and attributed samples, too.

Different DataConnect file examples can be seen as follows.

DataConnect file to forwarding only basic data - primary date format - :

```
A4M,1001,0,0,VNT,VisualChk,2004.02.05,14:00:04,,,,,120,2,0,1,0,1,0,0,0,0,0,0,0,0
A4M,1002,0,0,VNT,VisualChk,2004.02.05,14:03:44,,,,,120,5,0,0,0,0,2,0,2,0,1,0,0,0
A4M,1001,0,0,VNT,VisualChk,2004.02.06,10:25:50,,,,,120,1,0,1,0,0,0,0,0,0,0,0,0,0
A4M,1002,0,0,VNT,VisualChk,2004.02.06,10:26:11,,,,,119,10,0,0,0,0,7,0,3,0,0,0,0,0
A4M,1001,0,0,VNT,VisualChk,2004.02.07,10:26:59,,,,,120,2,0,1,0,0,1,0,0,0,0,0,0,0
A4M,1002,0,0,VNT,VisualChk,2004.02.07,10:28:29,,,,,118,8,0,0,0,0,6,0,0,0,2,0,0,0
```

DataConnect file to forwarding attributed samples with sample ID's - primary date format -:

```
A4M,1001,0,0,VNT,VisualChk,2004.02.05,15:00:04,
KISS,100001,A02,2,120,3,0,1,0,1,0,0,0,0,0,0,0,0
A4M,1002,0,0,VNT,VisualChk,2004.02.05,16:00:01,
KISS,100002,A02,2,120,5,0,0,0,0,2,0,2,0,1,0,0,0
```

DataConnect file to forwarding attributed samples with sample ID's - secondary date format -:

```
A4M,1001,0,0,VNT,VisualChk,02-05-04,15:00:04
,KISS,100001,A02,2,120,3,0,1,0,1,0,0,0,0,0,0,0,0
A4M,1002,0,0,VNT,VisualChk,02-05-04,16:00:01
,KISS,100002,A02,2,120,5,0,0,0,0,2,0,2,0,1,0,0,0
```

A4M: workgroup ID,
1002: machine ID,
0: head number (*no head identification*),
0: position number (*no position identification*),
VNT: product ID,
VisualChk: failure group ID,
02-05-04: date (*in format mm-dd-yy*),
16:00:01: time,
KISS: user ID,
100002: mask ID,
A02: shift ID,
2: team ID,
120: number of inspected parts (sample size),
5: number of defected parts,
0,0,0,0: 1st - 4th failures did not occur in given sample (in 120 parts),
2: 5th failure occurred on 2 parts,
0: 6th failure did not occur in given sample,
2: 7th failure occurred on 2 parts,
0: 8th failure did not occur in given sample,
1: 9th failure occurred on 1 part,
0,0,0: 10th - 12th failures did not occur in given sample.

(Number of inspected failures is 12.)