
Flensburg

Wind Inverter Production

Data exchange
SAP - PDC

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1 Revisions

Date	Rev.	By	Description
30.10.13	0.5	hkg	Initial version
03.12.13	0.6	hkg	Add section 7 (FH21 definition) and 8 (FTP connection to PDC), also added reminder, that files must be written with temporary file name and renamed after writing.
09.12.13	0.7	hkg	Added Quantity to FH28. Added 5.2.4 for reporting Goods Issue on non batch- and serialized components in FH27. Added UOM to FH26 under header "02". Added UOM to FH27 and FH28
20.12.13	0.8	hkg	Added UOM, reservation no, Item reservation no, GI+GR storage location to FH26. Added Reservation no, Item reservation no and GI storage location to FH27. Added Reservation no and GR storage location to FH28.
20.12.13	0.9	hkg	Removed Navision part numbers from the FH26 file. (from header 01,02,03,04)
16.01.14	1.0	hkg	Changes made to paragraph 5, serial ID is not to be send to SAP, instead the corresponding batch number is to be found in IIS by PDC prior to sending to SAP.

2 Terms and abbriviations used in this document

PDC	Process and Data Control for controlling production line and equipment
TBD	To be determined
UOM	Unit Of Measurement

3 General

This document describes the different transaction files used between SAP and PDC in the Wind Inverter production in Flensburg.

4 FH26 – Production order released from SAP (SAP->PDC)

The Production order release transaction is send from SAP to PDC.

It will contain production order information including BOM and operation numbers.

4.1 File name

"FH26"+'production order number [8 number]'+.txt

Please note: Datafile must be written with temporary filename

Create/write the file with a prefix "TMP_" and after end writing it must be renamed to correct filename. This prevents PDC to read the file before writing of the file has finished.

Do not copy temporary filename to correct filename, it must be rename, after written to PDC filesystem.

Copy is to slow therefore rename is necessary.

File name example:

FH2612345678.txt

FH26	Prefix
12345678	Production order number [8 number]
.txt	Suffix

4.2 File content

The file includes 4 different headers.

- 01 – Head information for this production order. (one line)
- 02 – BOM, includes operation no., Navision partno., Danfoss partno., And quantity. (one line per part/operation)
- 03 – Material list, includes Navision partno., Danfoss partno., Component description (one line per different part No.)
- 04 – Unit Header, includes Navision partno., Danfoss partno., Unit description. (one line)

Content example:

```
0100422543135F0001001yyyyyyy1234567812345002013102913265320131101xxxxxxxxxxPCS1234567890GRSL
020010135B5009001PCS6789GISL
020010135B5009001PCS6789GISL
020010135B5010001PCS6789GISL
020010135B0002001PCS6789GISL
020030135B2004002PCS6789GISL
020040135B0013001PCS6789GISL
020040135B2004002PCS6789GISL
020050135B1000001PCS6789GISL
020060135B1008001PCS6789GISL
020060135B1009001PCS6789GISL
020060135B1005021PCS6789GISL
020060135B3000021PCS6789GISL
03135B4001SMPS PCB -- ; -- ; A9B10064364 K10101B
03135B4002VC GATE DRIVER BOARD -- ; -- ; A9B10061499 CSD 150
03135B4003G1 GATE DRIVER BOARD -- ; -- ; A9B10061500 CSD 149
03135B4004N1 GATE DRIVER BOARD -- ; -- ; A9B10061591 CSD 148
03135B5001Balancing resistor 16570; -- ; A9B10038553 UXP 600 800 Ohm 5%
03135B5004Voltage transducer -- ; -- ; A9B10065088 CV 3-2000
03135B5006DC Fuse -- ; -- ; A9B10065089 PC70UD13C250TF, T300489C
03135B5009IEC Fixing plug RS195-912; -- ; -- ; 984x2017 PX0580/ 63
03135B5010IEC Retaining clip RS195-928; -- ; -- 984x2016 KT0006
03135B6001DC Laminate harness F21782; SA-3604-001; A9B10061690
03135B6002VT1 Harness F21783; SA-3604-002; A9B10061691
03135B7006reusable packaging; 4102476 ; -- ; --
04135F0001Power Stack; PMG-IM; 3x 600V/1000A OEM-2 Design
```

Header 01 Production order description/example:

0100422543135F0001001yyyyyy1234567812345002013102913265320131101xxxxxxxxPCS1234567890GRSL

01	Order header
00422543	Production order number [8 number]
135F0001	Danfoss Unit Part Number [8 char]
001	Quantity 26-28 [3 number]
yyyyyy	Customer number [7 number]
123456781234	Customer order no [8 number] + OrderLine no.
500	Order priority 48-50 [3 number] (normal prio=500, high prio=001)
20131029132653	Time Stamp YYYYMMDDhhmmss
20131101	Delivery date YYYYMMDD 64-72 [8 number]
xxxxxxxxxx	Customer Reference no
PCS	Unit Of Measurement [3 char]
1234567890	Reservation number [10 number]
GRSL	Storage Location for GR [4 char]

Header 02 BOM description/example:

020010135B5009001PCS6789GISL

02	BOM header
0010	Operation number [4 number]
135B5009	Danfoss Part Number [8 char]
001	Quantity 22-24 [3 number]
PCS	Unit Of Measurement [3 char]
6789	Item reservation number [4 number]
GISL	Storage Location for GI [4 char]

Header 03 Material description/example:

03135B5001 Balancing resistor 16570; -- ; A9B10038553 UXP 600 800 Ohm 5%

03	Material List header
135B5009	Danfoss Part Number [8 char]
...	Description [80 char]

Header 04 Unit description/example:

04135F0001 Power Stack; PMG-IM; 3x 600V/1000A OEM-2 Design

04	Unit header
135F0001	Danfoss Part Number [8 char]
...	Description [80 char]

5 FH27 - Material consumption – Goods Issue (PDC->SAP)

The goods issue transaction is sent from PDC to SAP upon material consumption during the different assembly steps in the production, but only on the material under P2L control.

The transaction will report back the batch number if the material is under batch control and the batch number is scanned during the pick process, else only the material number is reported back to SAP.

NEW: For serialized material, PDC must report the batch number back to SAP.

It has been agreed that all serialized material must enter the off-line label printer station even though the component already has a serial ID supplied by the vendor.

The batch number for the serialized materials is stored in IIS, by the off-line label print application, and from IIS, PDC has to fetch it prior to sending to SAP.

The batch number is stored in the table/column `complabel.customer_part_id.wep_no`.

PDC must ensure it is the 14 digit batch number that is sent to SAP, in most cases the value stored in IIS is only the WEP-number which is 6 digits - PDC must therefore put the material part number in front of the WEP-number prior to sending to SAP.

But PDC must check if the material part number is already included as leading part.

If no batch number is found in IIS due to missing data, PDC will only report the material number back to SAP.

Material, which is not under P2L control, will be reported back to SAP upon finalizing the single product (unit), which today happens at the process control station.

A FH27 will be sent containing a list of all material not “checked off” in PDC, there will be no batch number on these materials. ~~nor serialized numbers on these materials.~~

5.1 File name

"FH27"+'production order number [8 number]'+ 'running random number [12 number]'+.txt

Please note: Datafile must be written with temporary filename

Create/write the file with a prefix "TMP_" and after end writing it must be renamed to correct filename. This prevents PDC to read the file before writing of the file has finished.

Do not copy temporary filename to correct filename, it must be rename, after written to PDC filesystem.

Copy is to slow therefore rename is necessary.

File name example.:

FH2712345678000000000001.txt

FH27	Prefix
12345678	Production order number [8 number]
0000000000001	Random running number [12 number]
.txt	Suffix

5.2 File content

The file will contain from 1 to many lines, where each line represent a consumed material, which again can be either a quantity of items with a specific batch number or material without batch number.

Each line will start with a “material list” header which is fixed “03”.

Followed by:

- Production Order Number [8 number]
- Unit Part Number [8 char]
- Time Stamp [14 char]
- Operation Number [4 number]
- Material Part Number [8 char]
- Material Quantity [3 number]
- Unit Of Measurement [3 char]
- Material Batch Number [30 char]
- Reservation number [10 number]
- Item reservation number [4 number]
- GI storage location [4 char]

5.2.1 Content example 1 (material with batch number, quantity 1):

0300427526135F0001201310291326530020135B6013001PCS135B601337676912345678906789GISL

03	
00427526	Production order number [8 number]
135F0001	Unit Part Number [8 char]
20131029132653	Time Stamp YYYYMMDDhhmmss [14 char]
0020	Operation Number 33-36 [4 no]
135B6013	Material Part Number [8 char]
001	Quantity 45-47 [3 number]
PCS	Unit Of measurement [3 char]
135B6013376769	Batch number or blank [30 char] Fill with spaces after number
1234567890	Reservation number [10 number]
6789	Item reservation number [4 number]
GISL	Goods issue storage location [4 char]

5.2.2 Content example 3 (serialized material, quantity 1):

When it's a serialized component, PDC must look up the batch number from IIS, and write the batch number in the transaction.
If no batch number found for a specific serial number, the batch number field is left blank.

0300427526135F0001201310291326530440135B3000001PCS135B300099999912345678906789GISL

03	
00427526	Production order number [8 number]
135F0001	Unit Part Number [8 char]
20131029132653	Time Stamp YYYYMMDDhhmmss [14 char]
0440	Operation Number 33-36 [4 no]
135B3000	Material Part Number [8 char]
001	Quantity 45-47 [3 number]
PCS	Unit Of measurement [3 char]
135B3000999999	Batch number or blank [30 char] Fill with spaces after number
1234567890	Reservation number [10 number]
6789	Item reservation number [4 number]
GISL	Goods issue storage location [4 char]

5.2.3 Content example 4 (no batch number):

0300427526135F0001201310291326530440135B3000001PCS12345678906789GISL

03	
00427526	Production order number [8 number]
135F0001	Unit Part Number [8 char]
20131029132653	Time Stamp YYYYMMDDhhmmss [14 char]
0440	Operation Number 33-36 [4 no]
135B3000	Material Part Number [8 char]
001	Quantity 45-47 [3 number]
PCS	Unit Of measurement [3 char]
	Batch number or Serial number [30 char] Fill with spaces after number
1234567890	Reservation number [10 number]
6789	Item reservation number [4 number]
GISL	Goods issue storage location [4 char]

6 FH28 – Finished product – Goods Received (PDC->SAP)

The goods receive transaction is send from PDC to SAP when a product is finalized.

It will contain production order number together with the ID number (serial number) of the finished product.

It will be send from PDC, when the product is finalized in the last process “Unit Process Control”.

6.1 File name

”FH28”+’production order number [8 number]’+’Unit ID (s/n)[18 char]’+.txt

Please note: Datafile must be written with temporary filename

Create/write the file with a prefix “TMP_” and after end writing it must be renamed to correct filename. This prevents PDC to read the file before writing of the file has finished.

Do not copy temporary filename to correct filename, it must be rename, after written to PDC filesystem.

Copy is to slow therefore rename is necessary.

File name example:

FH2812345678135F0001123499Z423.txt

FH28	Prefix
12345678	Production order number [8 number]
135F0001123499Z423	Unit ID (S/N) [18 char]
.txt	Suffix

6.2 File content

The file will contain 1 line.

The line will start with an order header which is fixed "01".

Followed by:

- Production Order Number [8 number]
- Unit Part Number [8 char]
- Unit s/n [10 char]
- Quantity [3 number] (fixed 001)
- Unit Of Measurement [3 char]
- Time Stamp [14 char] Reservation number [10 number]
- Reservation number [10 number]
- GR storage location [4 char]
-

Note: Unit Part Number and Unit s/n is actual the complete ID (serialized no.) of the product.

Content example 1 (product with ID 135F0001123499Z423):

0100427526135F0001123499Z423001PCS201310291326531234567890GRSL

01	
00427526	Production order number [8 number] Position 3-10
135F0001123499Z423	Unit ID [18 char] <i>Pos. 11-18 is Unit Part number</i> <i>Pos. 19-28 Unit s/n</i>
001	Quantity 29-31 [3 number]
PCS	Unit Of measurement [3 char]
20131029132653	Time Stamp YYYYMMDDhhmmss [14 char]
1234567890	Reservation nubmer [10 number]
GRSL	Goods issue storage location [4 char]

7 FH21 – TECO to PDC (SAP -> PDC)

When a production order is technically completed (TECO) in SAP, the information is send from SAP to PDC.

7.1 File name

"FH21"+'production order number [8 number]'+.txt

Please note: Datafile must be written with temporary filename

Create/write the file with a prefix "TMP_" and after end writing it must be renamed to correct filename. This prevents PDC to read the file before writing of the file has finished.

Do not copy temporary filename to correct filename, it must be rename, after written to PDC filesystem.

Copy is to slow therefore rename is necessary.

File name example:

FH2112345678.txt

FH21	Prefix
12345678	Production order number [8 number]
.txt	Suffix

7.2 File content

The file will contain 1 line.

The line will start with an order header which is fixed "01".

Followed by:

- Production Order Number [8 number]
- Teco mark [1 char]
- Time Stamp [14 char]

Note: Unit Part Number and Unit s/n is actual the complete ID (serialized no.) of the product.

Content example 1 (product with Order No: 00427526):

0100427526X20131029132653

01	
00427526	Production order number [8 number]
X	TECO mark [1 char]
20131029132653	Time Stamp YYYYMMDDhhmmss

8 FTP connection to PDC

The following defines how to connect to PDC for data exchange via FTP.

The PDC system, both test and productive, is running on the following server: **wd0234**
Please note: use hostname (wd0234) for connection to PDC and not IP-address.

The login username determines what environment is chosen.

8.1 Test environment on PDC

Connect information to PDC test environment:

Server\Folder: wd0234
Username: tsap2flb
Password: data2pdc
Destination folder: from_sap (please change to this folder and store datafile)
Source folder: to_sap (please change to this folder, where reading data from PDC)

8.2 Productive environment on PDC

Connect information to PDC productive environment:

Server\Folder: wd0234
Username: psap2flb
Password: data2pdc
Destination folder: from_sap (please change to this folder and store datafile)
Source folder: to_sap (please change to this folder, where reading data from PDC)