

Metrex FactoryLink applicatie PLC Software

Produced July 3, 2005

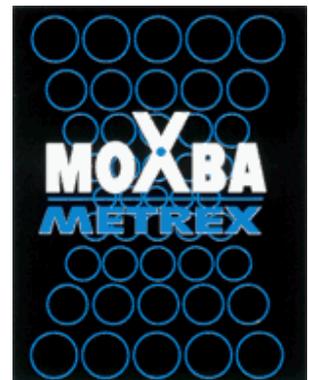


TABLE OF CONTENTS

SECTION 1

Algemene instellingen SCADA applicatie.....	1
1-1 Licenties SCADA	2
1-2 Alarm Logger + Viewer	6
1-3 Siemens H1 communicatie	8
1-4 SQL Server en ODBC Historian.....	10
1-5 FLLAN	12
1-6 Power net.	14
1-7 Timer taak	15
1-8 Printer spooler.....	16

SECTION 2

Graphic screens.....	17
2-1 Menu screens.....	18
2-2 Trend screens.....	20
2-3 Command screens.....	24
2-4 Alarm screens	25
2-5 Process screens	27

SECTION 3

Alarmen in SCADA applicatie.....	51
3-1 Alarmen in SCADA	52

SECTION 4

Rapporten SCADA applicatie	59
4-1 Rapporten in SCADA	60

SECTION 5

PLC Symboliek data.....	63
5-1 PLC symboliek data	64

TABLE OF CONTENTS

SECTION 1

Algemene instellingen SCADA applicatie

De rapport layouts het SCADA systeem zijn in dit hoofdstuk opgenomen.

1-1	Licenties SCADA	2
1-2	Alarm Logger + Viewer	6
1-3	Siemens H1 communicatie	8
1-4	SQL Server en ODBC Historian.....	10
1-5	FLLAN	12
1-6	Power net.	14
1-7	Timer taak	15
1-8	Printer spooler.....	16

1-1 Licenties SCADA

DE totale FactoryLink applicatie bestaat uit twee systemen, ieder systeem een een development/run time licentie. De serie nummers voor de twee FactoryLink systemen zijn: 116397NT en 116398NT.

116397NT



Exhibit A - License Information

Serial Number: 116397NT (System ID: 116397)

Configuration Sequence:

BXI6 ZT6G R6J5 RCHP DV3N YPUD FCEH BAR5 JE

Microsoft SQL Server 2000 is included with your FactoryLink system. Each FactoryLink Client includes a Microsoft SQL Server Client (CAL).

The key for installing SQL Server is: M8V92-B646M-WX6KH-4JC3J-93TTB.

Please refer to the FactoryLink Software License Agreement for detailed license information. Microsoft licensing requires that a SQL Client must have the same or later version number as the server software being used. Therefore, SQL Server 7.0 CALS may not be used on SQL Server 2000 servers; but SQL Server 2000 CALS may be used on SQL Server 7.0 servers.

Support Information

Start Date	End Date	Support Type
9/25/02	9/24/03	SSS

After FactoryLink is installed, you need to authorize the license within 10 days. It is not necessary to have Internet access on the computer where FactoryLink is installed to obtain the authorization code. To Authorize your software visit the USDATA Customer Support Worldwide Web at:
<http://www.usdata.com/services/authorization.html>

System Configuration

QTY	Item Number	Description	PO Number
1	A000*FLECS*NTI*70	FACTORYLINK 70	IW02132
1	A000*ENT*NTI*70	70 ENTERPRISE SERVER (UNLIMITED I/O AND TAG)	IW02132
1	2000*LICENSEONLY*NTI*70	NO MEDIA - LICENSE ONLY (WEB/EMAIL)	IW02132
1	2000*SH7-E*NTI*70	SIEMENS H1 S5/S7 (INCLUDES IOXLATOR)	IW02132
1	A000*4XX-UE*NTI*70	ENTERPRISE-SERVER (UNLIMITED I/O AND TAG) UPGRADE TO 70, NO CSS	IW02132
1	CAL-U	Total Concurrent ECS Client Licenses	

Customer Information

Bill To

WIZARD INFORMATION SYSTEMS BV
 PIOENROOSSTRAAT 26
 ROSMALEN, 5241
 NL
 MARJON HAAGEN

Ship To

WIZARD INFORMATION SYSTEMS BV
 PIOENROOSSTRAAT 26
 ROSMALEN, 5241 AB
 NL
 MARJON HAAGEN

Install To

WIZARD INFORMATION SYSTEMS BV
 PIOENROOSSTRAAT 26
 ROSMALEN, 5241 AB
 NL
 MARJON HAAGEN

Old Serial Number

18133WIN

This Exhibit A replaces and supercedes any prior Exhibit A(s) for the licensed software. If the serial number has changed, the original serial number may be obtained from USDATA.

Serial Number: 116397NT

Options currently configured:

Option	Lite	Description
1	*	DEV - Configuration Manager
6	*	DEV - Event & Interval Timer
7	*	RUN - Event & Interval Timer
8	*	DEV - Alarm Supervisor
9	*	RUN - Alarm Supervisor
12	*	DEV - Math and Logic
13	*	RUN - Interpreted Math and Logic
14	*	RUN - OPC Client
16	*	DEV - Trending
17	*	RUN - Trending
20	*	DEV - Batch Recipe
21	*	RUN - Batch Recipe
22	*	DEV - Report Generator
23	*	RUN - Report Generator
24	*	DEV - Network
25	*	RUN - Network
40	*	DEV - ODBC Historian
41	*	RUN - ODBC Historian
44	*	RUN - Total Concurrent Client License
49	*	DEV - Software Key
58	*	DEV - Distributed Alarm Manager
60	*	RUN - Comm/Asyn/Network Adapter Services
62	*	RUN - EDI Task
64	*	RUN - I/O Translator Task
75	*	DEV - File Manager Task
76	*	RUN - File Manager Task
77	*	RUN - Real Time Database Debugger
102	*	RUN - Connection & Data Server
104	*	RUN - Siemens RAPD H1 Driver
119	*	RUN - Database Logger
121	*	RUN - dBASE IV Historian
123	*	RUN - Database Browser
129	*	DEV - Database Browser
130	*	DEV - Database Logger
134	*	DEV - dBASE IV Historian
149	*	DEV - Dynamic Data Exchange
150	*	RUN - Dynamic Data Exchange

116398NT



Exhibit A - License Information

Serial Number: 116398NT (System ID: 116398)

Configuration Sequence:

BXI6 ZT6G N4J5 RCHP DV3N GQSD FCEH BAR5 JE

Microsoft SQL Server 2000 is included with your FactoryLink system. Each FactoryLink Client includes a Microsoft SQL Server Client (CAL).

The key for installing SQL Server is: M8V92-B646M-WX6KH-4JC3J-93TTB.

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System Configuration

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Old Serial Number

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Serial Number: 116398NT

Options currently configured:

Option	Lite	Description
1	*	DEV - Configuration Manager
6	*	DEV - Event & Interval Timer
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8	*	DEV - Alarm Supervisor
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12	*	DEV - Math and Logic
13	*	RUN - Interpreted Math and Logic
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16	*	DEV - Trending
17	*	RUN - Trending
20	*	DEV - Batch Recipe
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23	*	RUN - Report Generator
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25	*	RUN - Network
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76	*	RUN - File Manager Task
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102	*	RUN - Connection & Data Server
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119	*	RUN - Database Logger
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123	*	RUN - Database Browser
129	*	DEV - Database Browser
130	*	DEV - Database Logger
134	*	DEV - dBASE IV Historian
149	*	DEV - Dynamic Data Exchange
150	*	RUN - Dynamic Data Exchange

1-2 Alarm Logger + Viewer

De alarm schermen hebben een opbouw voor presentatie van alarmen, de zogeheten views, de layout van deze views wordt vastgelegd in het bestand {FLINK}/msg/en/al_fmt.txt. Voor de views is alleen deze definitie in het bestand van belang:

```

* *****
* ALARM VIEWER FORMATS
*   Purpose: These formats are used to display alarms on the Viewer.
*   FLCM Panel: "Alarm View Control" panel, "Line Format" column
*
* View Format 1
VIEW_1   $DAT$ $TIM$ $LOG$ $ACK$ $GMS$ $MSG$
*
* View Format 2
VIEW_2   $TIM$                               $MSG$
*
* View Format 3
VIEW_3   $DAT$ $TIM$ $LOG$ $AID5$ $STS8$ $GMS$ $MSG$
*
* View Format 4
VIEW_4   $LOG$ $OPR8$ $TIM$ $TAG16$ $GMS$ $MSG$
*
* View Format 5
VIEW_5   $LAN$ $TIM$ $LOG$ $STS4$ $GMS$ $MSG$
*
* View Format 6
VIEW_6   $TIM$ $LOG$ $GMS$ $MSG$
*
* View Format 7
VIEW_7   $TIM$ # $LAN$ $OPR8$ $TIM$ $TAG16$ $GMS$ $MSG$
*
* View Format 8
VIEW_8   $LOG$ $OPR8$ $TIM$ $TAG16$ $GMS$ $MSG$
*
* View Format 9
VIEW_9   # $LAN3$-$AID4$ at $TIM$ : $GMS$ $MSG$
*
* Old (Pre-FL4.4) View Format Defintions
* VIEW_1   $DAT$ $TIM$ $LOG$ $TAG16$ $ACK$ $GMS$ $MSG$
* VIEW_5   $TIM$ : $STS8$ : $GMS$ $TAG16$
* VIEW_6   $TIM$ : $OPR8$ : $AID4$ $GMS$ $MSG$

* *****
* ALARM PRINT DEVICE FORMATS
*   Purpose: These formats are used to print alarms on the print device
*   FLCM Panel: "Alarm Group Control" panel, "Active Stat Print Dev" column
*
* Initial Alarm Occurance
PRTINI   $DAT$ $TIM12$ $TAG16$ $GMS$ $MSG$

```

```
*
* Alarm Acknowledgement
PRTACK    $ADT$ $ATM12$ $TAG16$ Acknowledged by: $OPR$
*
* Alarm Return-To-Normal
PRTNRM    $NDT$ $NTM12$ $TAG16$ Normal Status
*
* Alarm "Unknown State" Format
PRTUNK    $DAT$ $TIM12$ $STS$ $AID$ UNKNOWN STATUS  $GMS$ $MSG$ $OPR$
*
* Event Occurance
PRTEVT    $DAT$ $TIM12$ EVENT $TAG16$ $GMS$ $MSG$

* *****
* ALARM PRINT ACTIVE FORMATS
*   Purpose: These formats are used to print active alarms on the print device
*             when the "Print Active" tag is triggered
*   FLCM Panel: "General Alarm Setup Control" panel, "Print Active Alarms Tag" col
*               "General Alarm Setup Control" panel, "Active List Print Device"
*
* Active Alarm Format
PRTACT    $DAT$ $TIM12$ $TAG16$ $STS$ $GMS$ $MSG$ $OPR$
*
* Logbook Entry Format (Part 1: Operator Name)
PRTOPR    "\tLogbook Message from operator %s\n"
*
* Logbook Entry Format (Part 2: Logbook Text)
PRTLOG    "\t%s\n"
```

1-3 Siemens H1 communicatie

De beide systemen halen ieder afzonderlijk de data uit de PLC, er is hier geen sprake van redundantie. Beide systemen werken volledig parallel. Bij het vervangen van de PC's of een netwerk kaart dient er rekening mee gehouden te worden dat de netwerk kaart een ander MAC adres heeft dan nu in de PLC geconfigureerd is. Bij een wijziging van de netwerk kaart dient de configuratie van de PLC aangepast te worden.

Er wordt door de H1-driver met 1 PLC gecommuniceerd, deze PLC is in de configuratie als drie devices opgegeven. Dit betekent dat er gelijktijdig drie read verbindingen, drie write verbindingen en drie unsolicited receive verbindingen met deze ene PLC actief zijn.

PLC MAC adres: 08 00 06 01 00 00

Read TSAP's: FETCH, FETCH2 en FETCH3.

Write TSAP's: RECEIVE, RECEIVE2, RECEIVE3.

Unsolicited TSAP's: SEND, SEND2, SEND3.

Alle verbindingen hebben een prioriteit van 2, statische verbindingen.

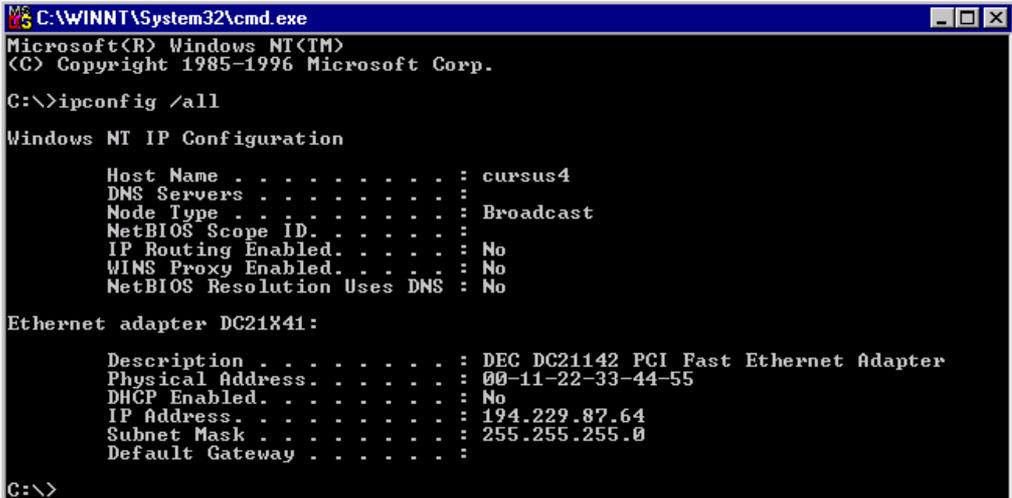
De encoded write wordt niet gebruikt, wel een normale exception write: deze laatste instelling wordt opgegeven bij de IO-translator.

De MAC adressen voor de beide PC-systemen zijn:

PC1: 00 - 11 - 22 - 33 - 44 - 55

PC2: 00 - 08 - 74 - 40 - B1 - 38

De MAC adressen van de netwerk kaarten kunnen gewijzigd worden, door een nieuw adres in de registry van Windows te plaatsen, zie onderstaande figuur.



```
C:\WINNT\System32\cmd.exe
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

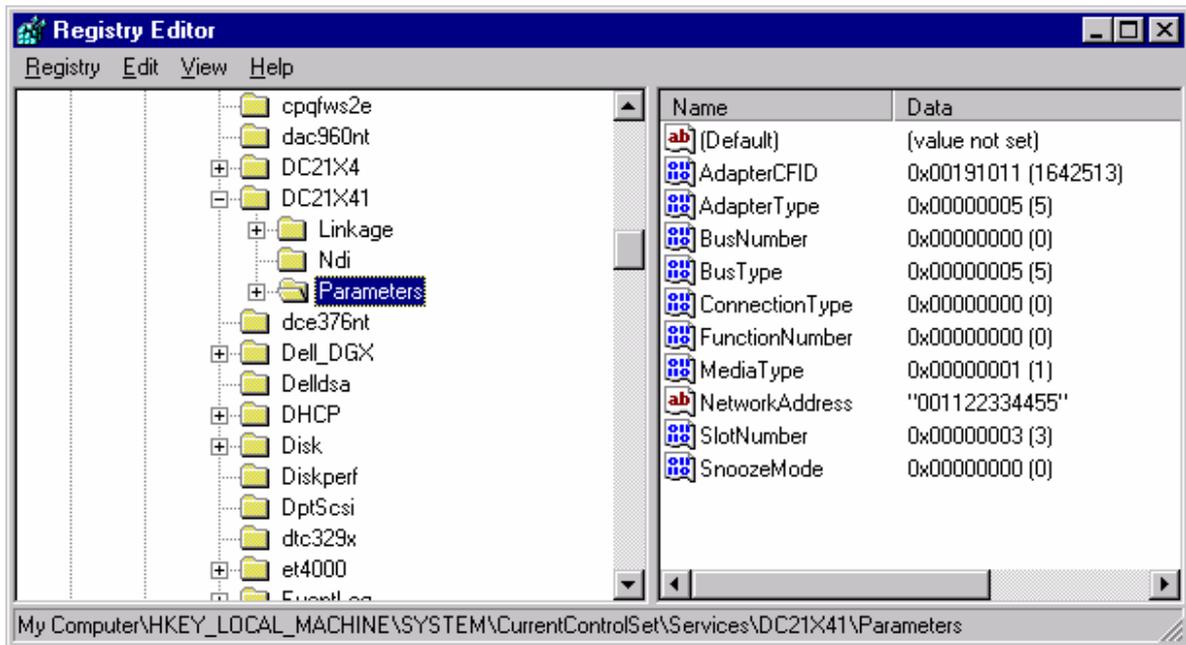
C:\>ipconfig /all

Windows NT IP Configuration

Host Name . . . . . : cursus4
DNS Servers . . . . . :
Node Type . . . . . : Broadcast
NetBIOS Scope ID. . . . . :
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
NetBIOS Resolution Uses DNS : No

Ethernet adapter DC21X41:

Description . . . . . : DEC DC21142 PCI Fast Ethernet Adapter
Physical Address. . . . . : 00-11-22-33-44-55
DHCP Enabled. . . . . : No
IP Address. . . . . : 194.229.87.64
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
```



1-4 SQL Server en ODBC Historian

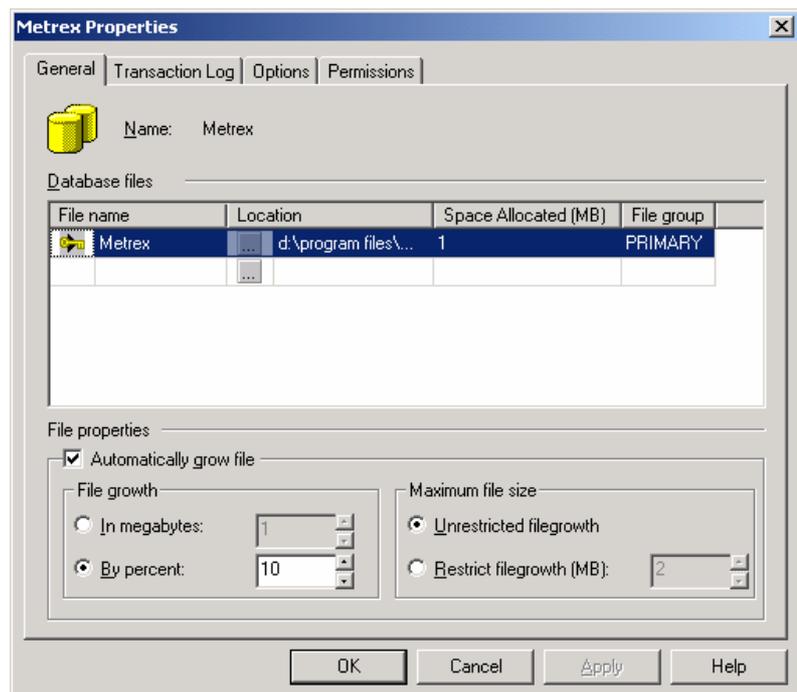
De ODBC historian dient om alle database transacties te laten verlopen met SQL-server. De volgende mailbox tags worden gebruikt:

HIST_ALARM, voor het loggen van alarmen in de database

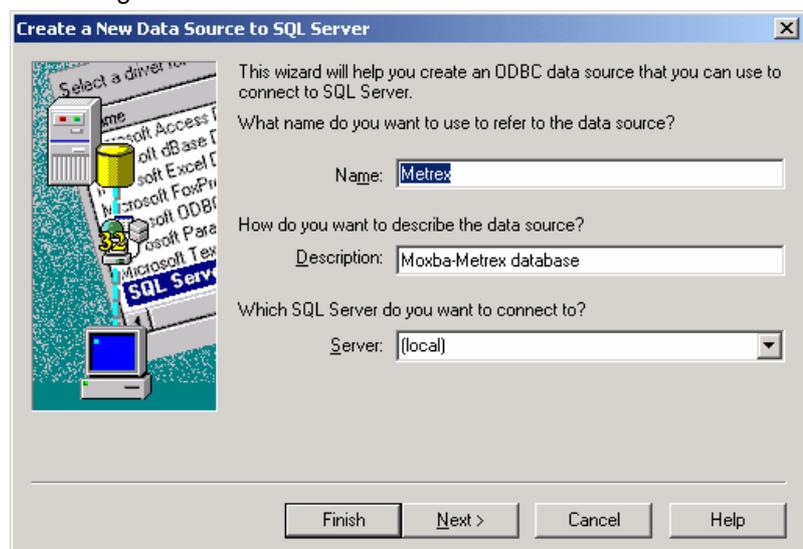
HIST_TREND, voor ophalen van trendgegevens uit de database

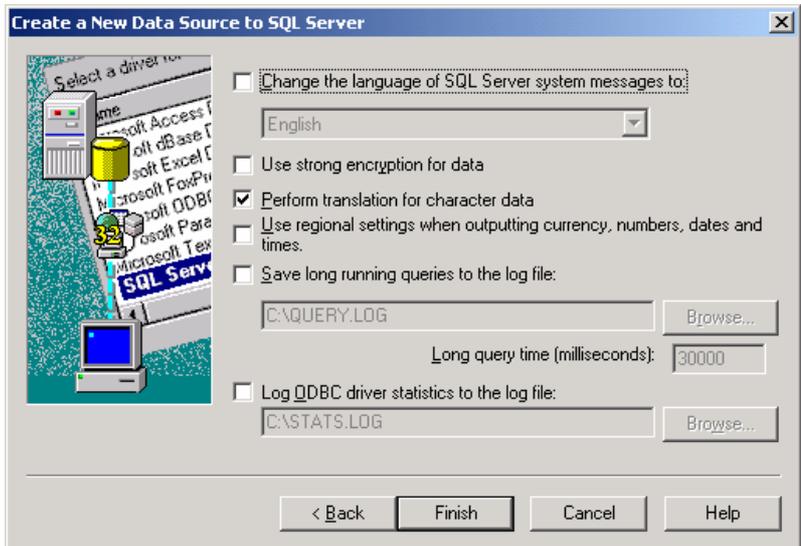
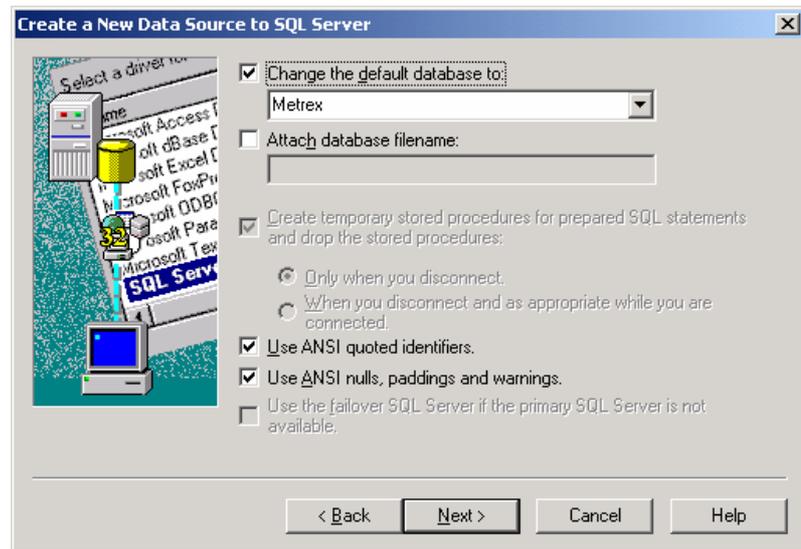
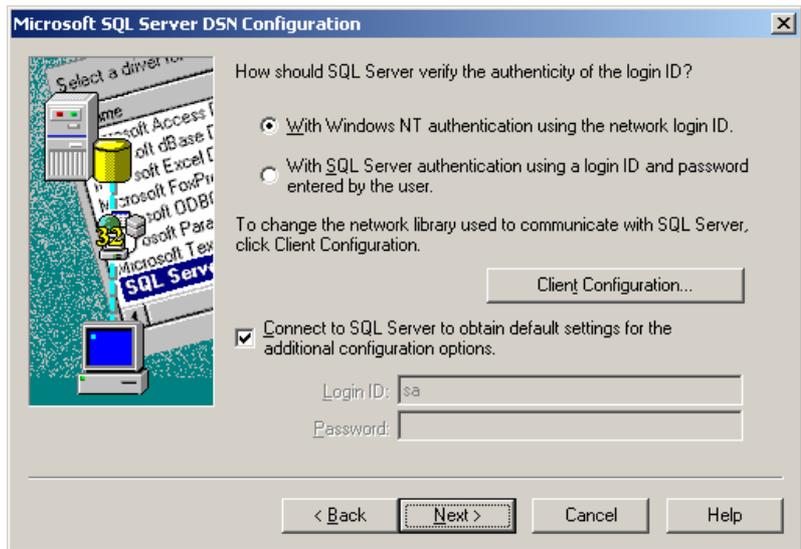
HIST_DBLOG, voor loggen van trending gegevens in de database

Voor SQL-server wordt slechts 1 database gebruikt: METREX. Definitie is via de SQL server interface. Er wordt een maximale grootte van de database ingesteld, deze grootte wordt overeenkomstig de hard disk van het systeem gekozen.



De database Metrex dient bereikbaar te zijn via de ODBC historian, hiervoor dient een DSN aangemaakt te worden. Dit gebeurt via het control panel, administrative tools, data sources. Voor de database Metrex wordt een systeem DSN aangemaakt.





1-5 FLLAN

De FLLAN taak verzorgt de communicatie tussen beide servers, ondelring worden voornamelijk ingeoverde waarden voor setpoints uitgewisseld.

Voor FLLAN dienen een aantal configuraties in netwerk bestanden ingevuld te worden: de hosts en services files dienen voorzien te worden van een aantal extra regels.

%system%/drivers/etc/hosts file

```
# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com           # source server
#       38.25.63.10      x.acme.com              # x client host

127.0.0.1       localhost
192.168.0.10    FLSERVER1
192.168.0.11    FLSERVER2
```

%system%/drivers/etc/services file

```
FLLAN           4096/tcp       fllan
FLFM            4097/tcp       flfm
FLFMSERV       4098/tcp       flfmserv
```

De IP-adressen van beide servers zijn vast:

```
FLSERVER1    192.168.0.10
FLSERVER2    192.168.0.11
```

De stationsnaam van station 1 wordt in IML gebruikt om de identiteit van het systeem vast te stellen, de naam wordt vast gelegd in de 'local' file van de FLLAN configuratie, en deze naam komt overeen met de systeem naam. Uitlezen wordt door de file manager gedaan, let op dat er vanuitgegaan wordt dat deze naam op de eerste regel van het bestand dient te staan. De local file zal dan ook voor beide systemen verschillend zijn. Aangezien dit een text

bestand is kan de stationsnaam aangepast worden zonder over een ontwikkel omgeving voor FL te beschikken.

{FLAPP}/net/local file

```
METREX = FLSERVER1,FLSERVER2;
```

De FactoryLink namen voor beide servers zijn nu gekoppeld aan de systeem namen: FLSERVER1 en FLSERVER2.

De groepen definities van onderling communicerende FLLAN systemen is vastgelegd in de file {FLAPP}/net/groups.

{FLAPP}/net/groups file

```
STATION1  
TX      = 10  
RX      = 40  
MAXSESS = 10  
ACK     = 10
```

1-6 Power net

Voor POWERNET dienen een aantal configuraties in netwerk bestanden ingevuld te worden: de hosts en services files dienen voorzien te worden van een aantal extra regels.

%system%/drivers/etc/hosts file

```
# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97      rhino.acme.com          # source server
#       38.25.63.10     x.acme.com             # x client host

127.0.0.1      localhost
192.168.0.10   FLSERVER1
192.168.0.11   FLSERVER2
```

%system%/drivers/etc/services file

```
POWERNET      5096/tcp      powernet
```

POWERNET gebruikt bovendien een environment variabele die per systeem verschillend ingesteld dient te zijn, dit is de variabele FLHOST. Deze environment variabele definieert de systeem naam van een PC, de gedefinieerde namen zijn FLSERVER1 en FLSERVER2. De beide environment variabelen mogen niet gelijk zijn, is dit wel zo dan zal POWERNET niet naar behoren functioneren!

FactoryLink systeem 1 IP = 192.168.0.10	FactoryLink systeem 2 IP = 192.168.0.11
set flhost FLHOST=FLSERVER1	set flhost FLHOST=FLSERVER2

1-7 Timer taak

De timer taak verzorgt de inhoud van een aantal voorgedefinieerde tag's die allen met datum en/of tijd te maken hebben. Een hiervan is de tag DATETIME, welke actuele dag datum en tijd weergeeft als tekst. Voor weergave van de datum in Europese vorm dient dit goed ingesteld te staan in Windows NT. Voor aanduiding van de dag als 3-letterig woord is alleen de engelse tekst aanwezig, deze kan in de file {FLINK}/msg/en/timer.txt gewijzigd worden naar een nederlandse variant.

{FLINK}/msg/en/timer.txt

```

STARTING Starting
RUNNING Running
SHUTDOWN Normal shutdown
CANTOPEN Can't open file '%s'
NUMCTS Wrong # of CTs archived in file '%s'
CANTCLOSE Can't close file '%s'
RHDRRD Reserved Timer tags not defined
RHDRDATA Invalid tag type for Reserved Timer tag %d
ETREAD Read failed for ETIMER record %d in file '%s'
ETBADDATA Bad data in ETIMER record %d, file '%s'
ITREAD Read failed for ITIMER record %d in file '%s'
ITBADDATA Bad data in ITIMER record %d, file '%s'
FINDCT Can't find %s in file '%s'
BADINDEX Bad %s index record in file '%s'
NOID Can't get FactoryLink ID (errno %d)
NORAM Out of memory
VERSION Wrong Kernel version (1.x required)
*
* Timer Debug Msgs
NOTAG No %s tags configured
ERRTAGWR %s tag write failed! (%d tags, error=%d)
TAGDUMP Dumping %s tag list (%d elements)
ENDDUMP End of %s tag list -----
GLOBAL Global
EVENT Event
INTERVAL Interval
*
* Weekday Names
*Sun Sun
*Mon Mon
*Tue Tue
*Wed Wed
*Thu Thu
*Fri Fri
*Sat Sat
Sun Zon
Mon Maa
Tue Din
Wed Woe
Thu Don
Fri Vry
Sat Zat

```

1-8 Printer spooler

De printer spooler taak van FactoryLink zorgt er voor dat print opdrachten vanuit FL naar 1 van de 5 mogelijke printers gestuurd worden. FacotryLink ondersteunt maximaal 5 verschillende printers. Bij Metrex wordt er slechts 1 printer, een HP Laserjet 1200 gebruikt.

Na iedere print opdracht wordt er een formfeed gegeven: kolom 'File separator sequence' = \0C. als eerste, voordat er een opdracht naar de printer wordt gestuurd, wordt de fontgrootte en de verticale spatiering ingesteld. Deze instellingen kunnen niet door de spooler gestuurd worden voordat het eigenlijke bestand afgedrukt wordt. Stuurcodes voor instellen van tekengrootte en spatiering worden opgenomen in de rapporten zelf. Als deze rapporten met dezelfde printer worden afgedrukt als geconfigureerd voor FactoryLink dan verschijnen deze karakters niet of de afdruk.

Command sequence	
Tekengrootte: \1B&k#S	0 = 10 4 = 12 (elite) 2 = 16,5 - 16,7 (gecomprimeerd)
Vertikale bewegingsindex: \1B&l#C	Stappen van 1/48 inch, com- primeert afdruk verticaal

Print Spooler Information

Domain Name : SHARED

```

Device                : \\FLSERVER1\Laser
Initialization Sequence: \1B&k4S\1B&l6C
File Separator Sequence: \0C
Binary On             :
Binary Off            :
Status TAG            : PRINTSTS
Message TAG           : PRINTMSG
Use OS Print Services : NO
Printer Font          :
Font Size             :
```

SECTION 2

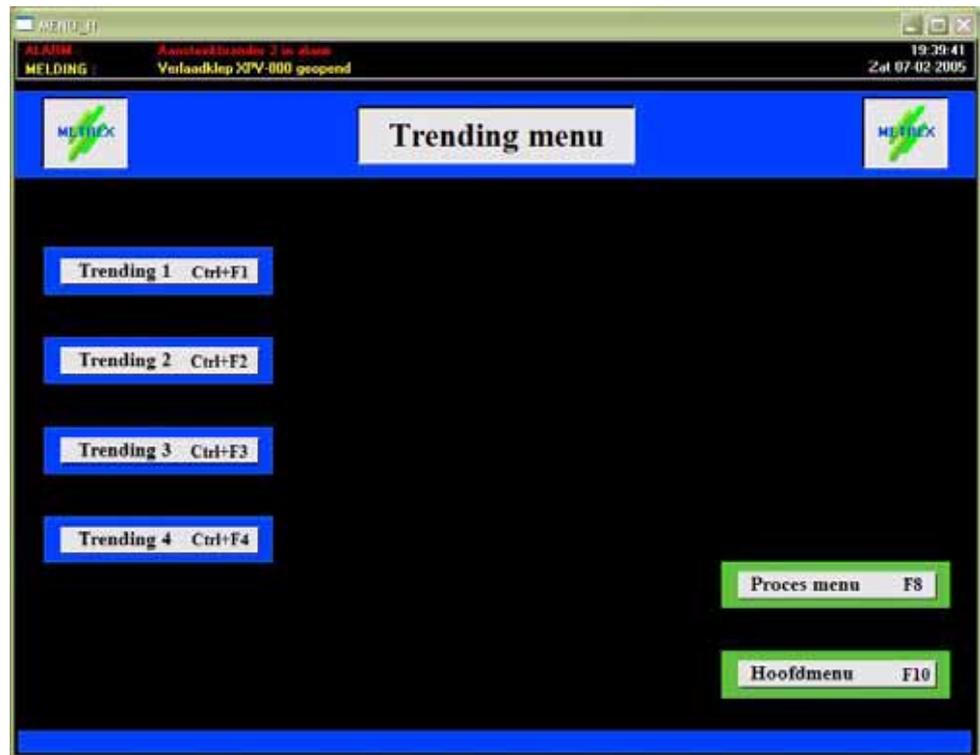
Graphic screens

Deze paragraaf bevat een afdruk van alle ECS-schermen die in de SCADA applicatie van Metrex in gebruik zijn.

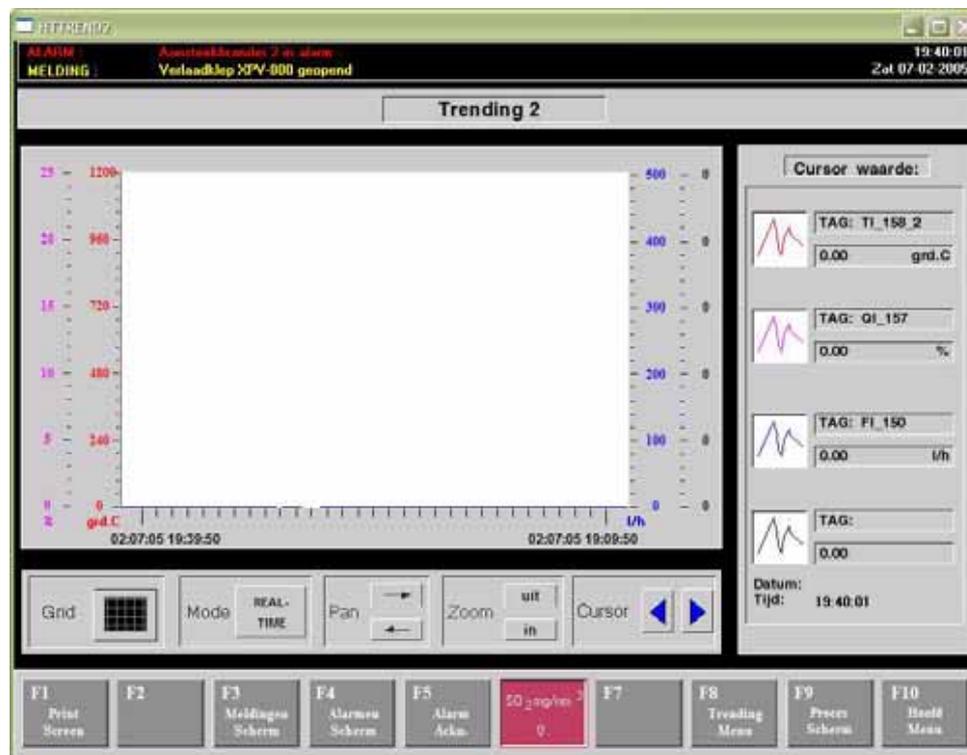
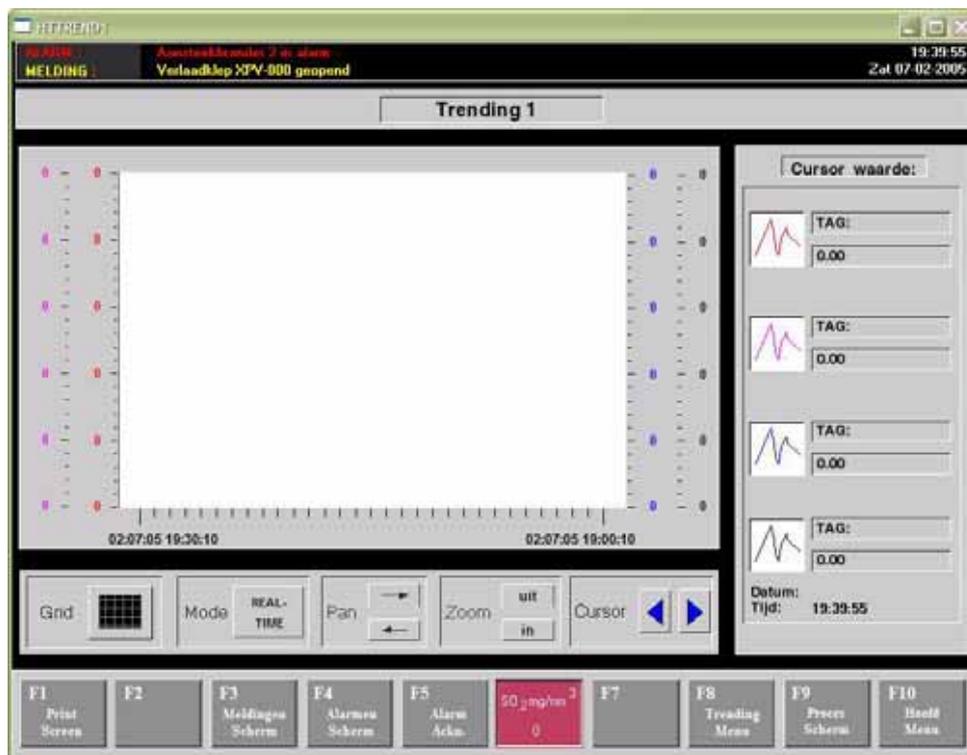
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2-2	Trend screens	20
2-3	Command screens	24
2-4	Alarm screens	25
2-5	Process screens	27
	Wervelbedoven	27
	Doekenfilter	29
	Onderloop	31
	Slibs en sludge	32
	Sproeikoeler	33
	Branderbed	34
	Rookgas koeling	36
	Rookgas wassing	37
	Oxidatie	38
	V-804 en Filterpers	40
	Opslag en verlading	41
	Mg(OH) ₂	42
	Koelwater	43
	Sealwater	44
	Perslucht	45
	Niveau's	46
	Intern transport	47
	Stoomsysteem	49

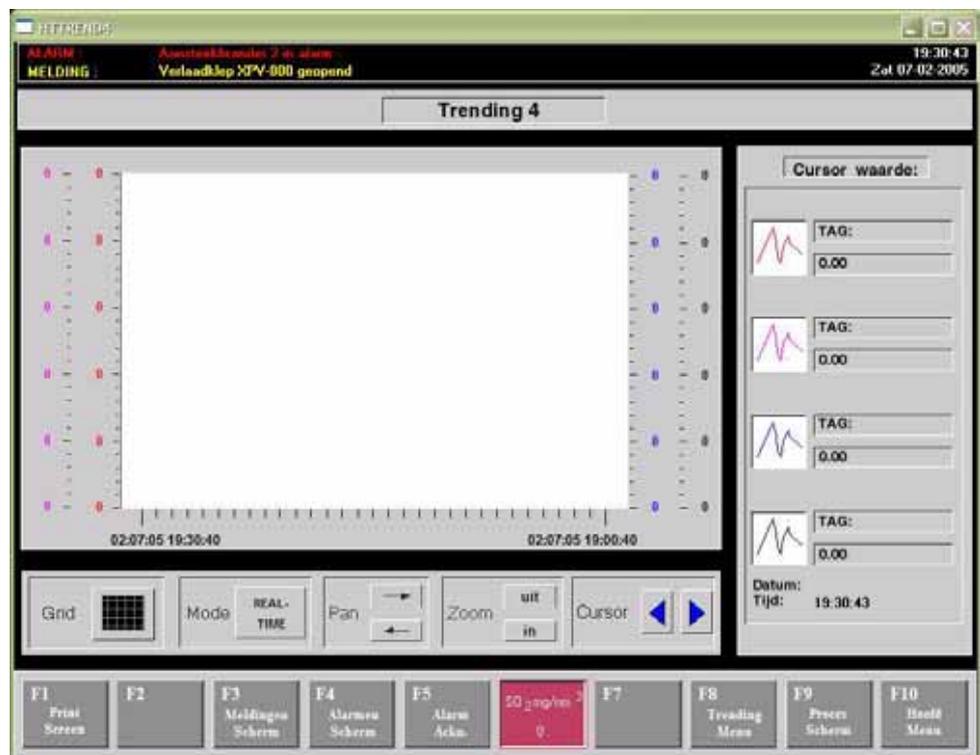
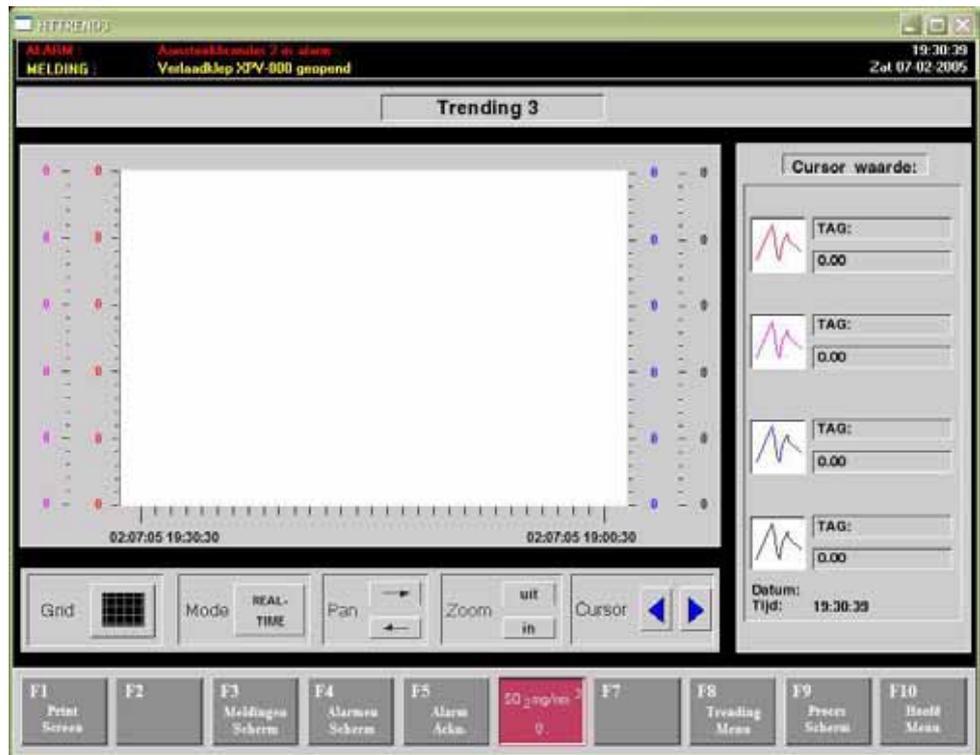
2-1 Menu screens





2-2 Trend screens





TAORELWIN

ALARM: **Asbestaafbranding 2 in alarm**

MELDING: **Verlaadklep XPV-000 geopend**

19:30:55
Zat 07-02-2005

WERVELIED-OVEN	
TI-106	Temperatuur katbunker B-150 onder
TI-192	Temperatuur katbunker B-150 midden
TI-193	Temperatuur katbunker B-150 boven
TI-187	Temperatuur katbunker B-151 onder
TI-194	Temperatuur katbunker B-151 midden
TI-195	Temperatuur katbunker B-151 boven
TI-152	Temperatuur in bunker B-153
TI-167	Temp. inlaat verbrandingslucht ventilator
TI-162.1	Temperatuur in branderbed
TI-158.2	Temperatuur bed 1 boven
TI-160.2	Temperatuur bed 1 onder
TI-159.2	Temperatuur bed 2 boven
TI-161.2	Temperatuur bed 2 onder
TI-163.1	Temperatuur in free board
TI-164	Temperatuur steenbekleding
TI-165.1	Temperatuur uitlaat oven
LI-167	Niveau kat bunker B-150
LI-168	Niveau katbunker B-151

SI-150	Toerental transport schroef A-150
SI-151	Toerental transport schroef A-151
dPI-156	Verschildruk roosterplaat bed 1
dPI-161	Verschildruk roosterplaat bed 2
dPI-160	Verschildruk bed 1 en 2 (bedhoogte)
FI-159	Verbrandings lucht stroom bed 1
FI-158	Verbrandings lucht stroom bed 2
FIC-159	Verbrandings lucht naar bed 1 en 2
FLU-150	Fluidisatie snelheid
PI-162	Vuurhaard druk regeling
NI-150	Vermogensmeting verbr.lucht vent. K-150
SIC-151	Frequentie rookgas vent. K-151
TI-150	Temperatuur invoer FBO natie KAT

ROTRENDSE TROMMEL-OVEN	
QI-157	Zuurstofgehalte uitgang RTO
TI-151	Uitlaattemperatuur RTO

SLIB EN SLUDGE SYSTEEM	
FI-150	Slib en sludge dosering bed 1
FI-151	Slib en sludge dosering bed 2

F1 F2 F3 Meldings Scherm F4 Alarms Scherm F5 Alarm Ack. **SO $\mu\text{g}/\text{m}^3$ 0** F7 Volgende Pagina F8 F9 F10 Terug

TAORELWIN

ALARM: **Asbestaafbranding 2 in alarm**

MELDING: **Verlaadklep XPV-000 geopend**

19:30:59
Zat 07-02-2005

SPROEIKOELER	
TI-171	Temperatuur inlaat sproeikoeler C-150
TI-172	Temperatuur uitlaat sproeikoeler C-150
FI-170	Waterflow naar sproeikoeler C-150
dPI-165	Verschildruk over sproeikoeler C-150

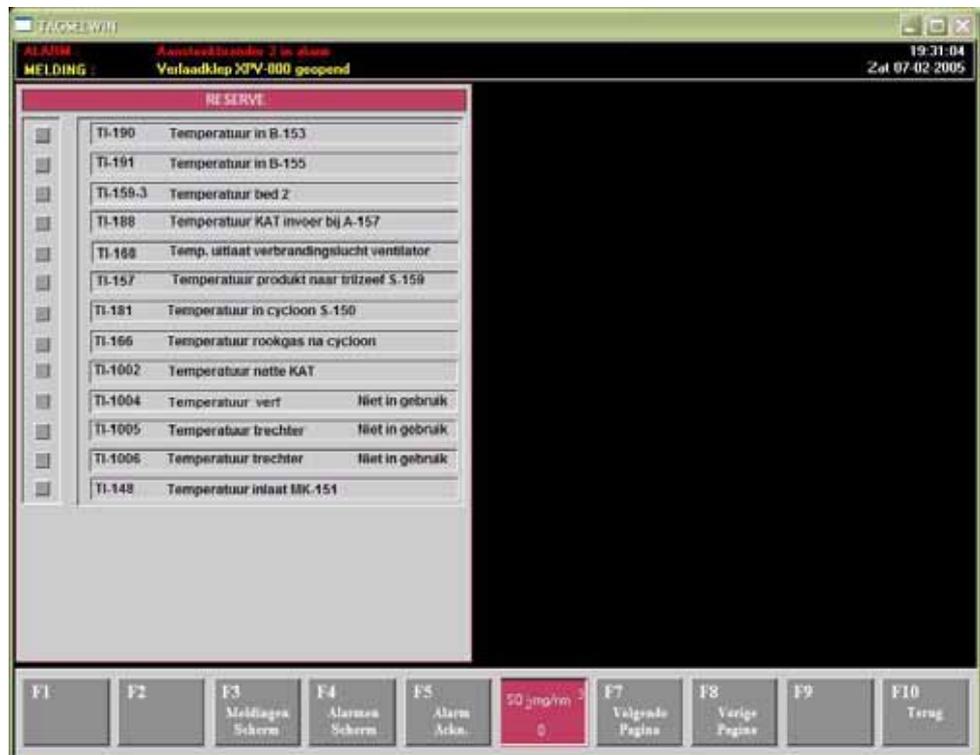
DOEKENFILTER	
TIC-176	Temperatuur regeling multi-cyclon
TI-166	Temperatuur rookgas naar doekenfilter
TI-147	Temperatuur kop doekenfilter
TI-149.1	Temperatuur in conus doekenfilter 1
TI-149.2	Temperatuur in conus doekenfilter 2
TI-149.3	Temperatuur in conus doekenfilter 3
TI-149.4	Temperatuur perslucht voorverwarming
dPI-166	Verschildruk over doekenfilter F-150
PI-820.1	Druk doekenfilter drukkamer 1
PI-820.2	Druk doekenfilter drukkamer 2
PI-820.3	Druk doekenfilter drukkamer 3
QI-150	Percentage O2 in rookgas
QI-151	Stofdichtheid van rookgas
TI-301	Ingangstemperatuur K-151

ROOKGAS KOELING	
SI-818	Vermogen ventilatoren K-818
PI-812	Druk rookgas naar rookgaskoeler Z-815
TI-813	Temperatuur rookgas uitlaat koeler Z-815
LI-815.1	Niveau scrubber C-815 in Z-815

ROOKGAS WASLING	
FI-816	Wasvloeistof naar kolom C-816
FI-817	Wasvloeistof naar kolom C-817
FI-818	Wasvloeistof naar kolom C-818
QI-816	pH afvoer kolom C-816
QI-817	pH afvoer kolom C-817
QI-818	pH afvoer kolom C-818
QI-811	SO2 in rookgas naar stack [mg/m ³]

OXIDATIE	
QI-820.1	pH wasvloeistof naar kolommen C-816/7/8
QI-820.2	Dichtheid pre-oxidatie vloeistof in V-820
QI-819	pH post-oxidatie vloeistof in V-819
LI-819.1	Niveau uitlaat post-oxidatie tank V-819
LI-820.1	Niveau uitlaat pre-oxidatie tank V-820

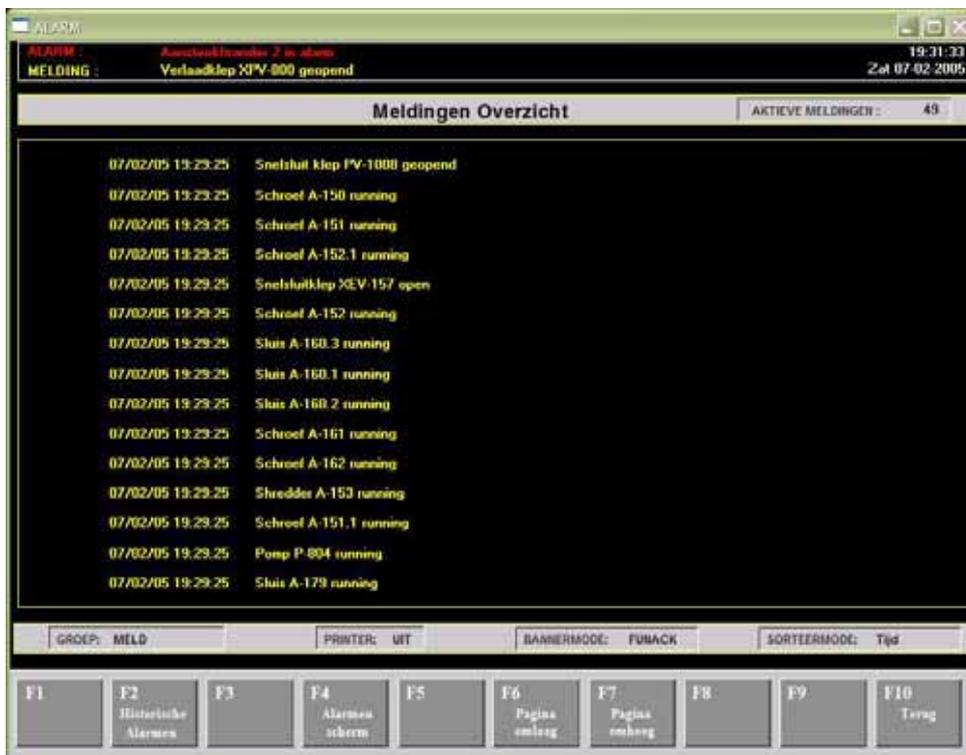
F1 F2 F3 Meldings Scherm F4 Alarms Scherm F5 Alarm Ack. **SO $\mu\text{g}/\text{m}^3$ 0** F7 Volgende Pagina F8 Volgende Pagina F9 F10 Terug

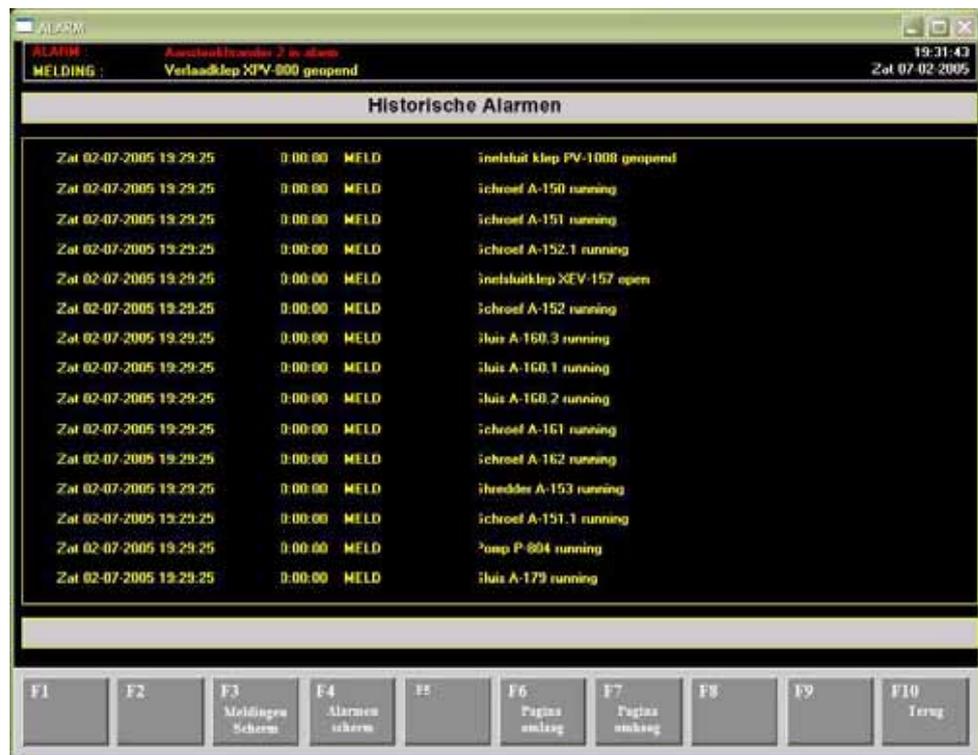


2-3 Command screens



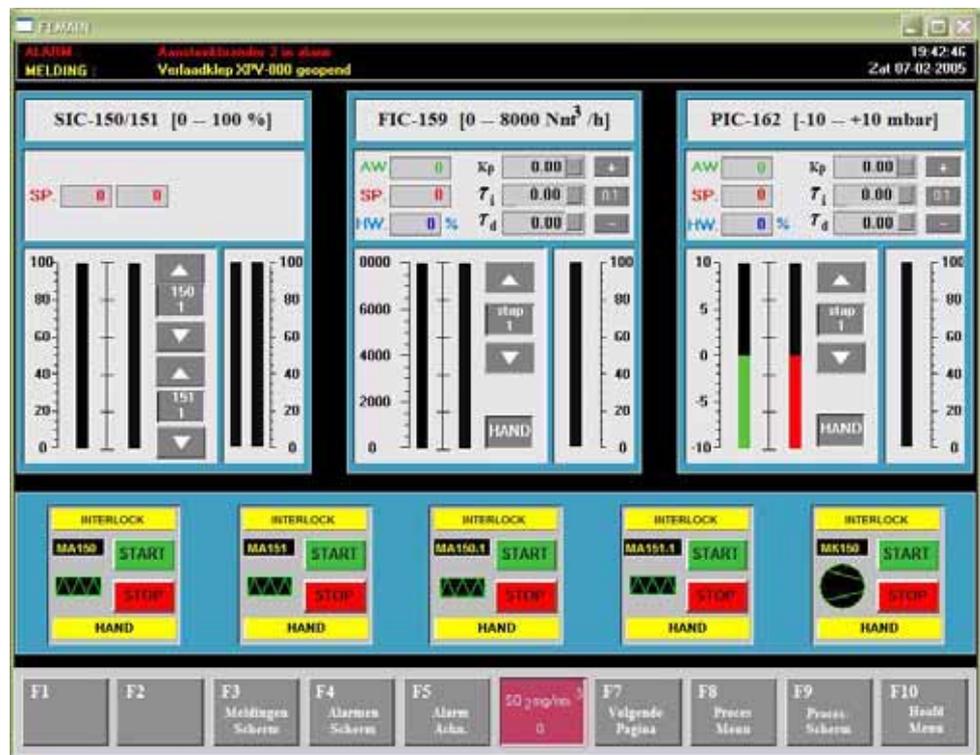
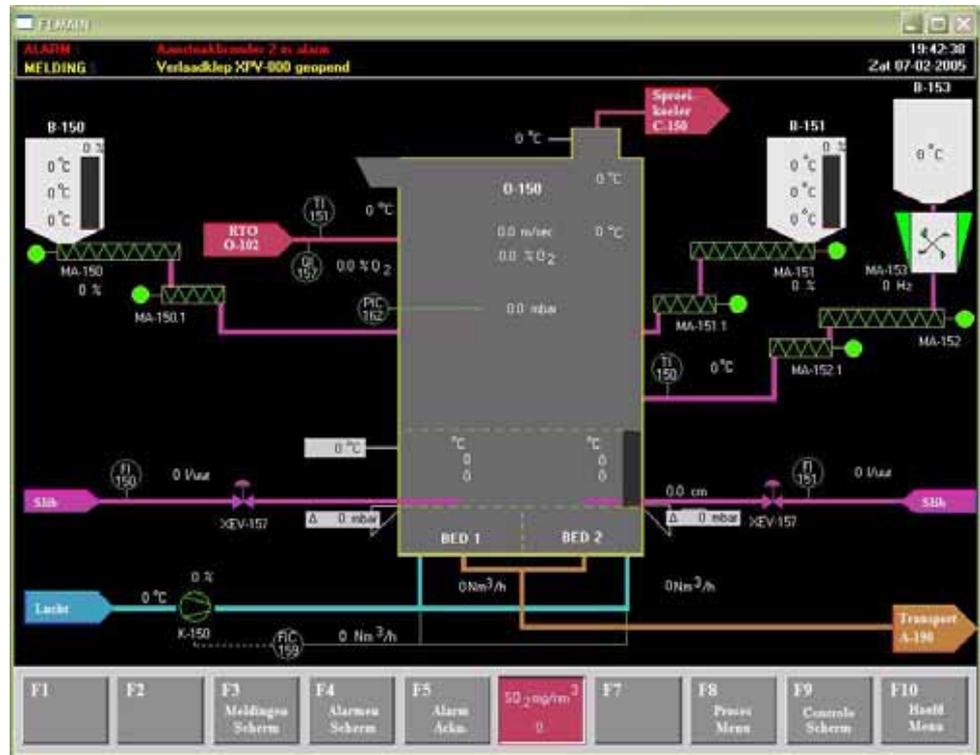
2-4 Alarm screens

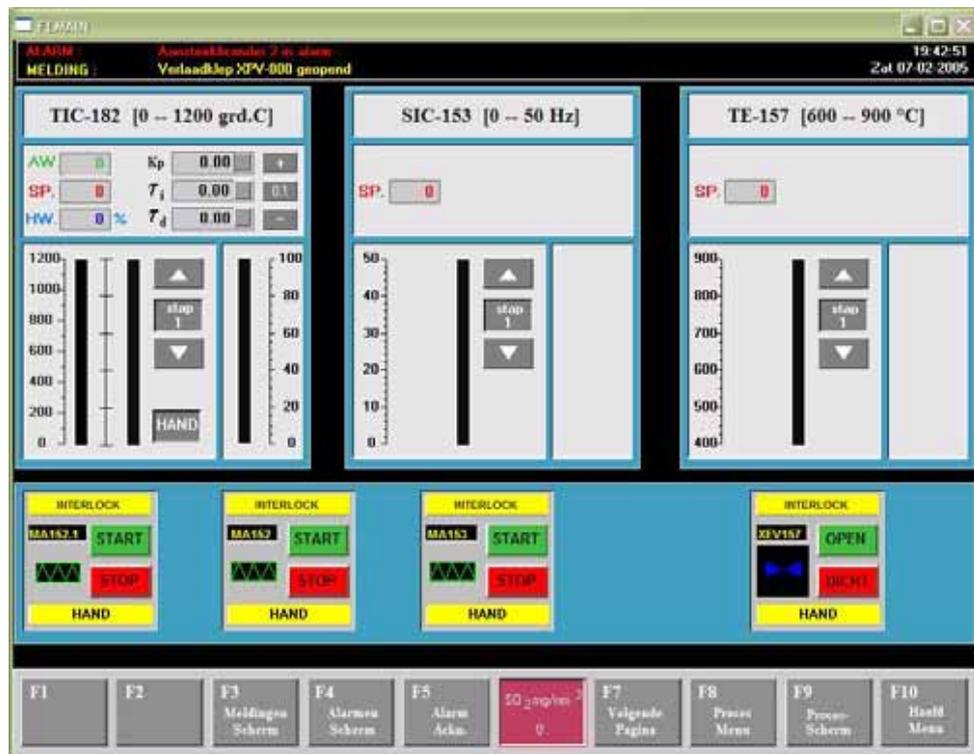




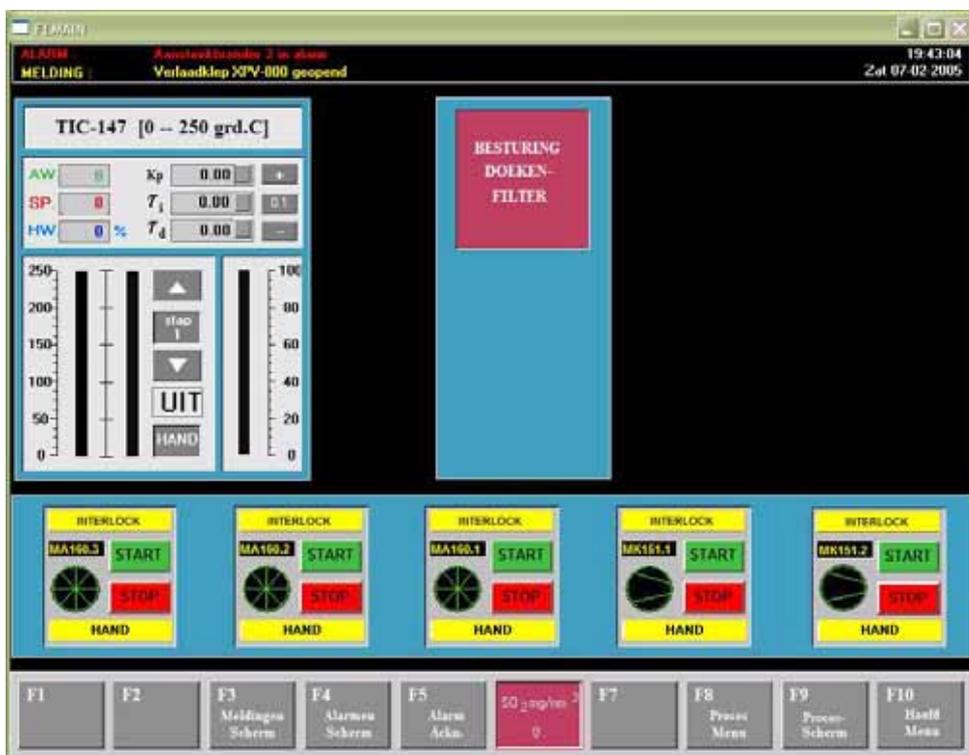
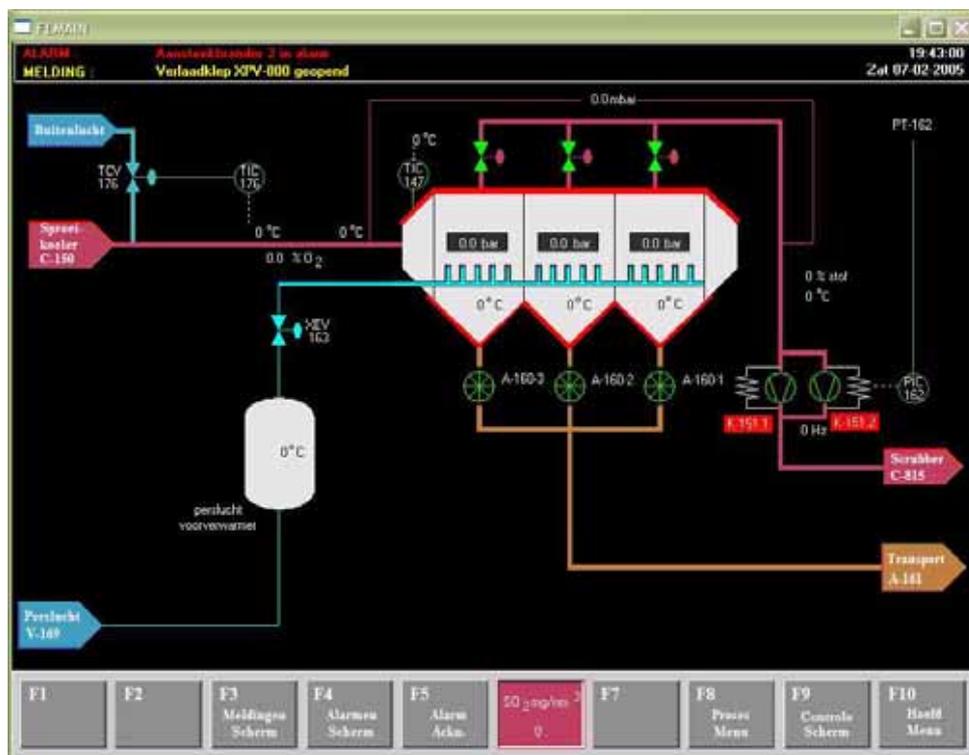
2-5 Process screens

Wervelbedoven





Doekenfilter



ALARME Aansteekgasalarm 2 in alarm 19:46:52
MELDING: Verlaatklep XPV-800 geopend Zet 07-02-2005

Besturing doekenfilter F-150

Selecteren spoelkleppen

Dookanfilter 1			Dookanfilter 2			Dookanfilter 3																	
<input checked="" type="checkbox"/> kloep 1	<input checked="" type="checkbox"/> kloep 2	<input checked="" type="checkbox"/> kloep 3	<input checked="" type="checkbox"/> kloep 4	<input checked="" type="checkbox"/> kloep 5	<input checked="" type="checkbox"/> kloep 6	<input checked="" type="checkbox"/> kloep 7	<input checked="" type="checkbox"/> kloep 8	<input checked="" type="checkbox"/> kloep 9	<input checked="" type="checkbox"/> kloep 10	<input checked="" type="checkbox"/> kloep 11	<input checked="" type="checkbox"/> kloep 12	<input checked="" type="checkbox"/> kloep 13	<input checked="" type="checkbox"/> kloep 14	<input checked="" type="checkbox"/> kloep 15	<input checked="" type="checkbox"/> kloep 16	<input checked="" type="checkbox"/> kloep 17	<input checked="" type="checkbox"/> kloep 18	<input checked="" type="checkbox"/> kloep 19	<input checked="" type="checkbox"/> kloep 20	<input checked="" type="checkbox"/> kloep 21	<input checked="" type="checkbox"/> kloep 22	<input checked="" type="checkbox"/> kloep 23	<input checked="" type="checkbox"/> kloep 24

Instellingen

Cyclus: 0.00 sec.
- 1.00 +

Open: 0.00 sec.
- 1.00 +

%-age stof 0 %

ΔP dook 0.0 mbar
- 1.0 +

ΔP max 0.0 mbar
- 1.0 +

ΔP min 0.0 mbar
- 1.0 +

START Sequence

Sequence loopt

Spoelsequence : EVEN/ONEVEN

STOP Sequence

RESET Sequence

Spoelsequence : OPVOLGEND

F1

F2

F3
Meldingen
Scherm

F4
Alarmeren
Scherm

F5
Alarm
Ackn.

SO₂ mg/m³
0

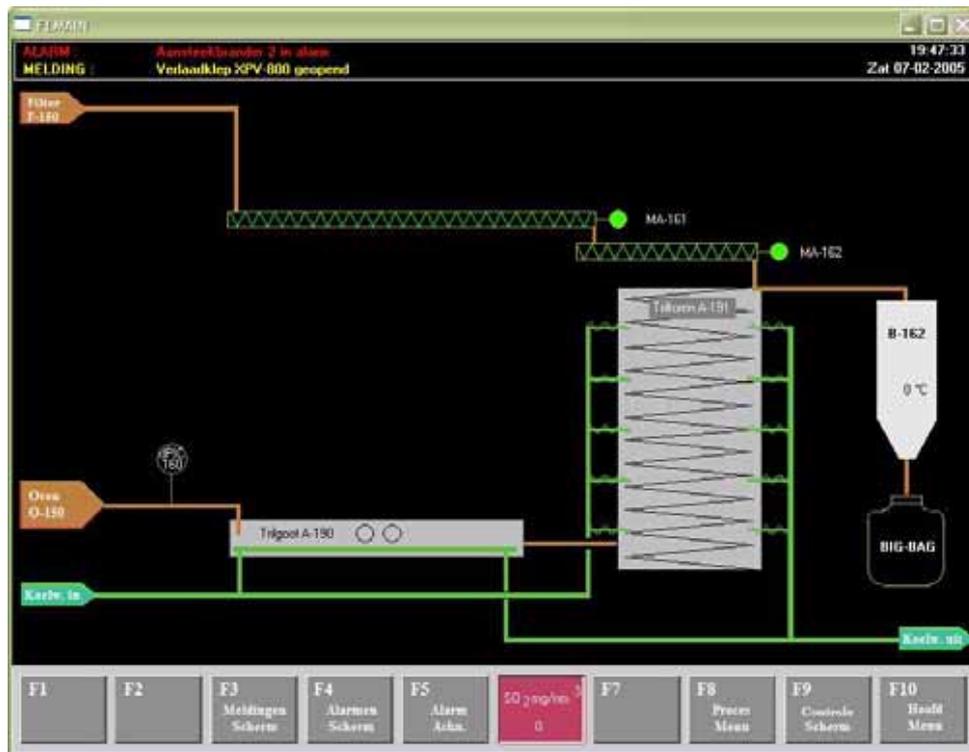
F7

F8
Sequence
Menu

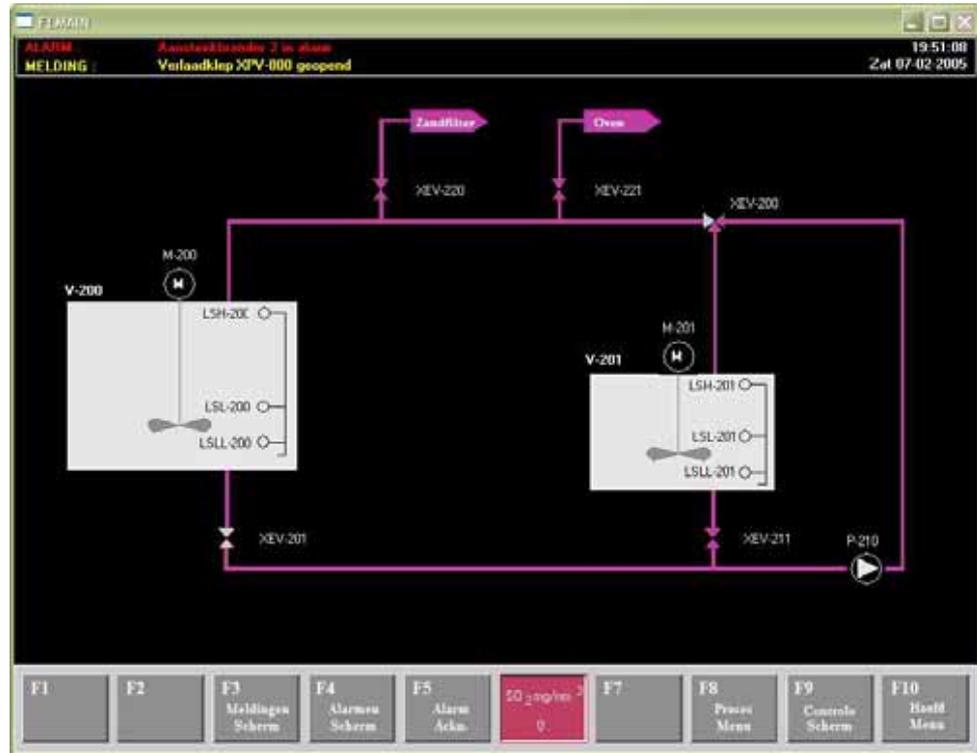
F9
Proces
Scherm

F10
Hulp
Menu

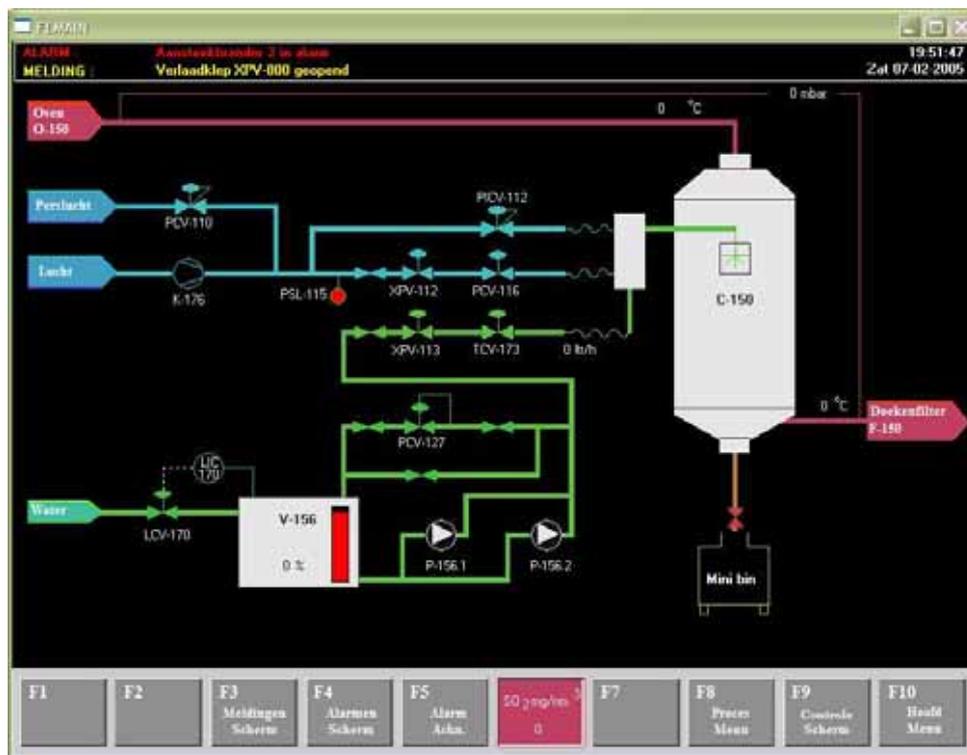
Onderloop



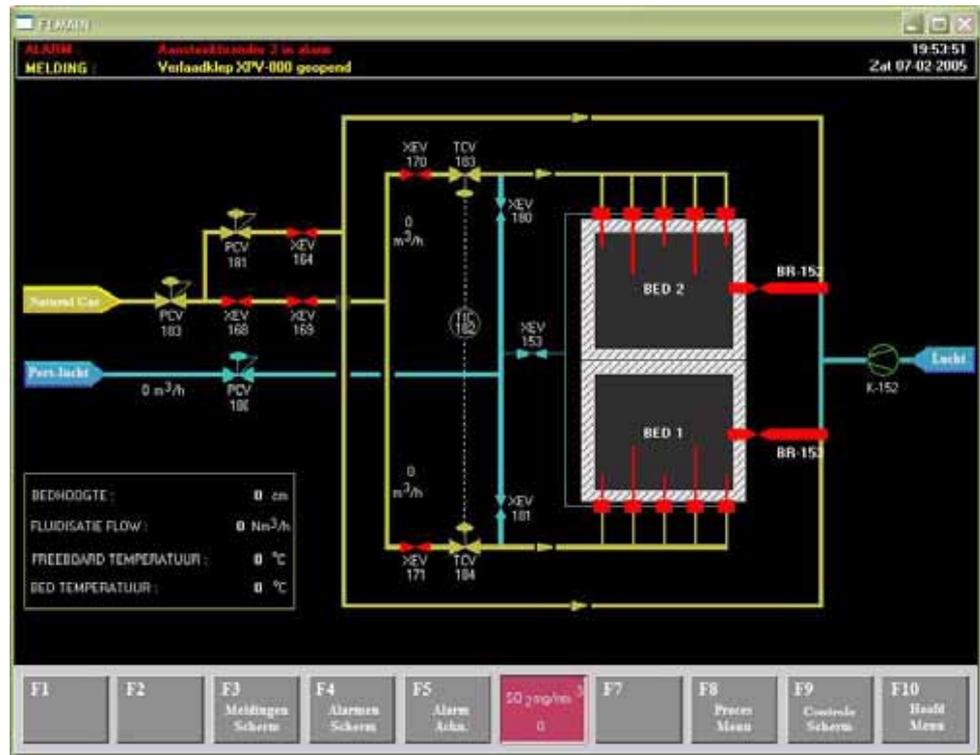
Slibs en sludge



Sproeikoeler

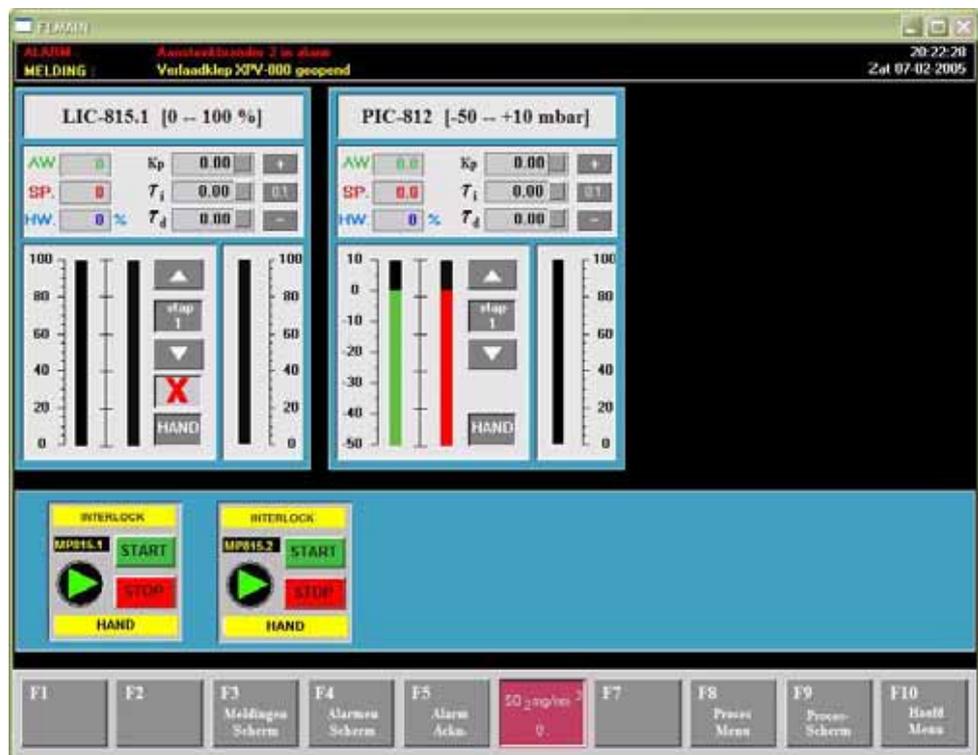
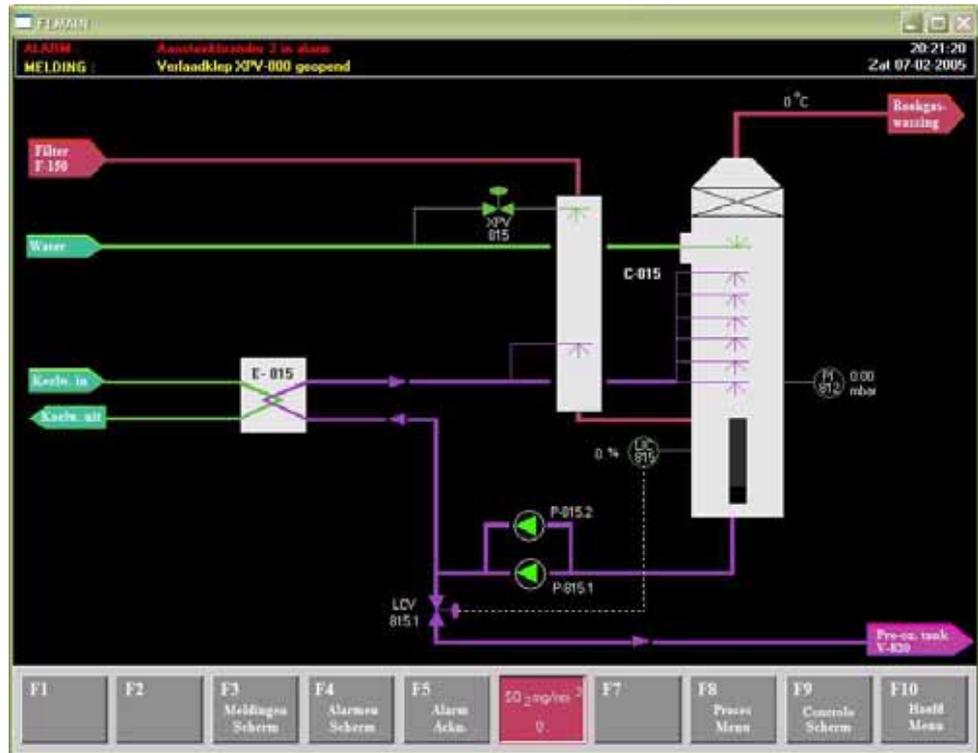


Branderbed

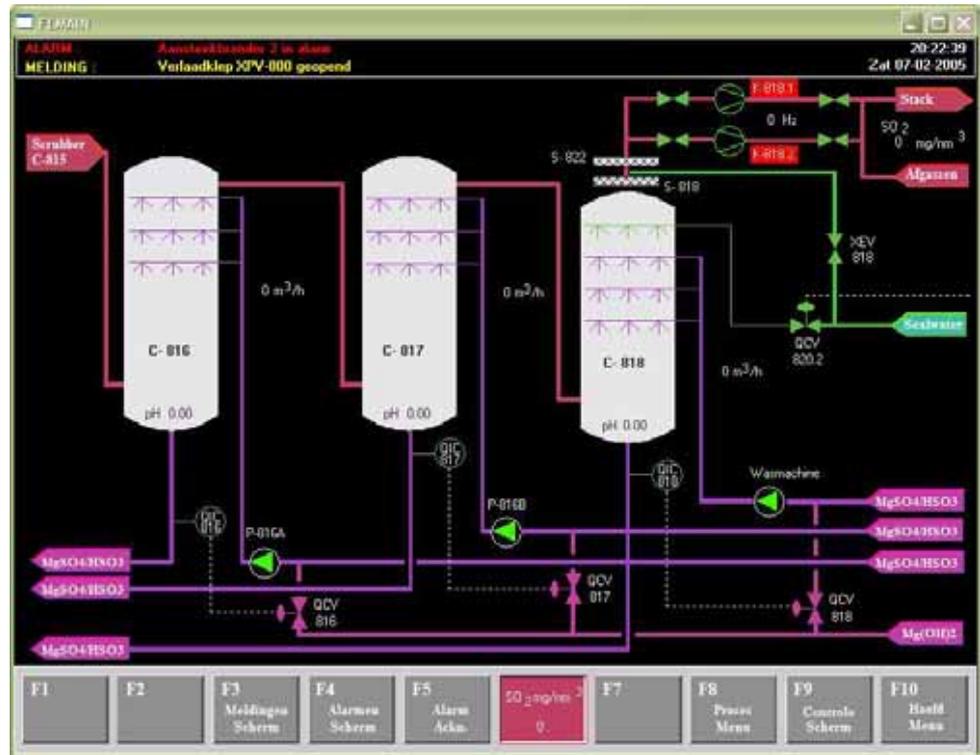




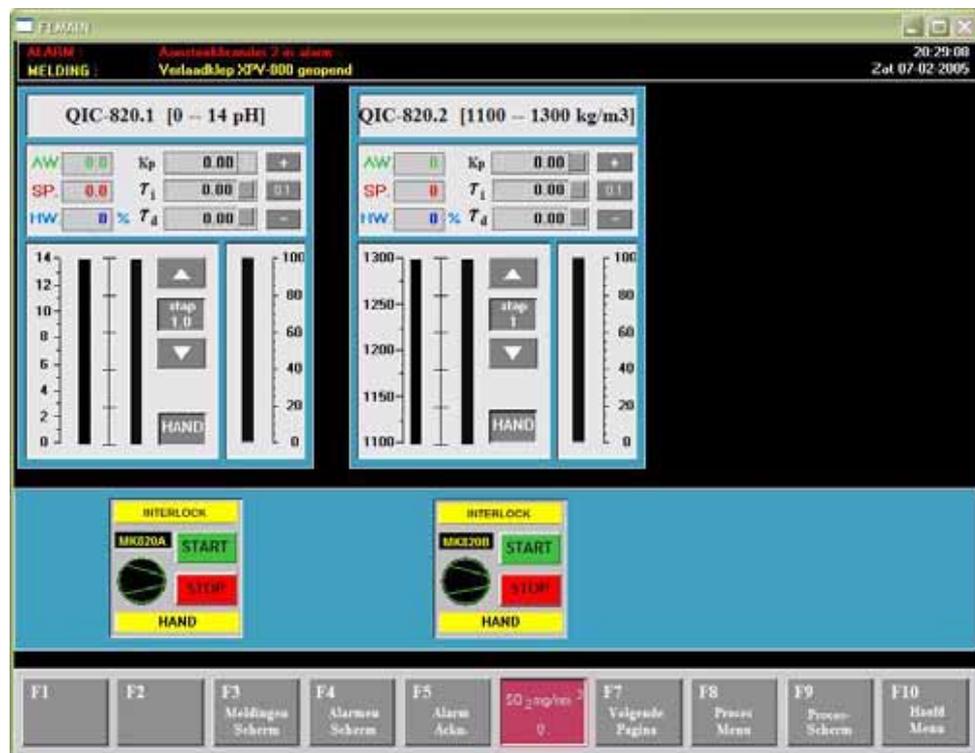
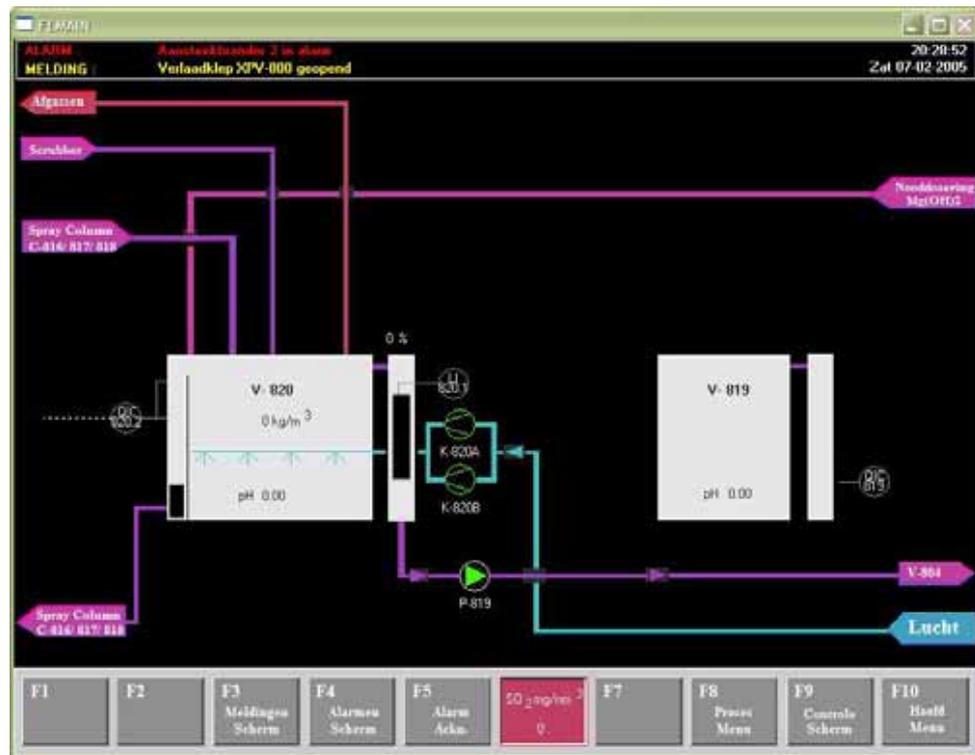
Rookgas koeling

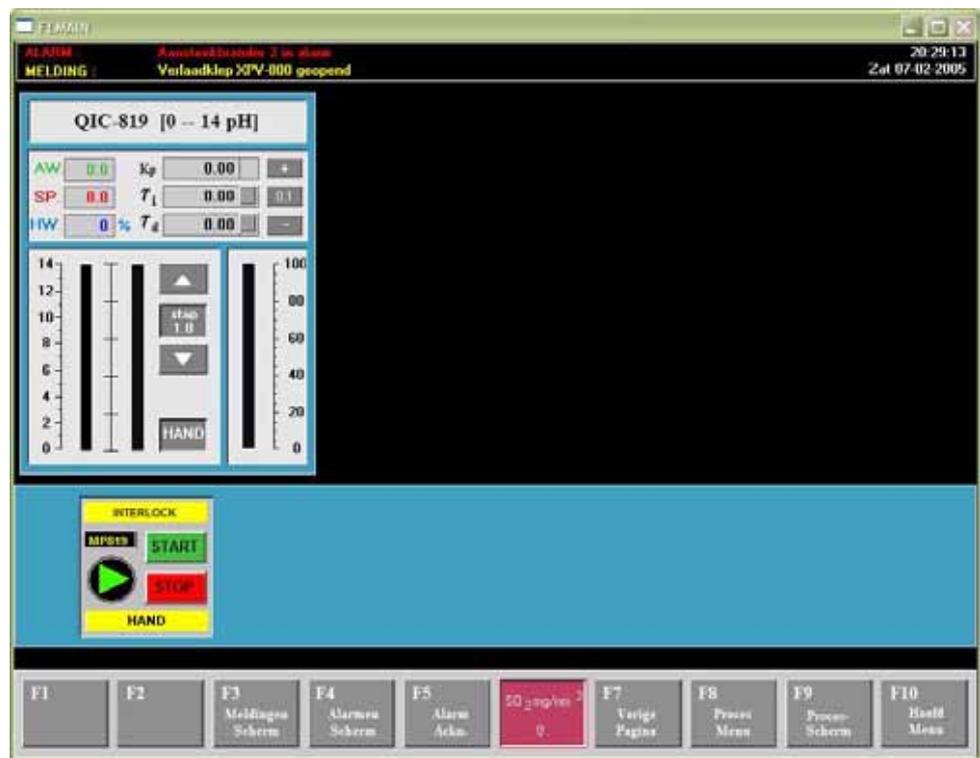


Rookgas wassing

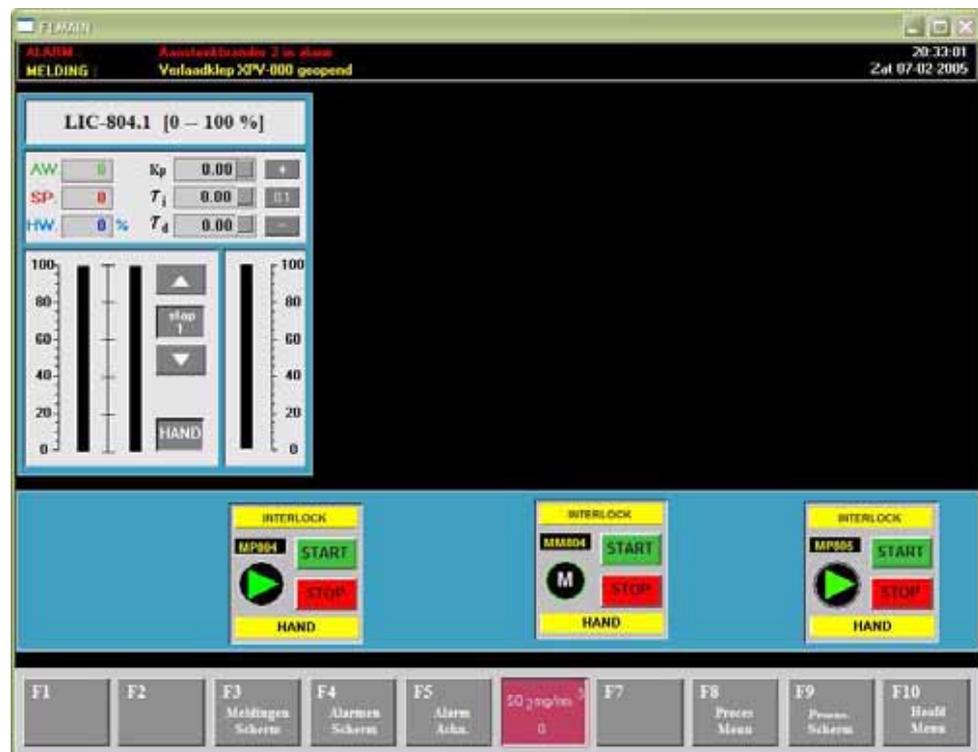
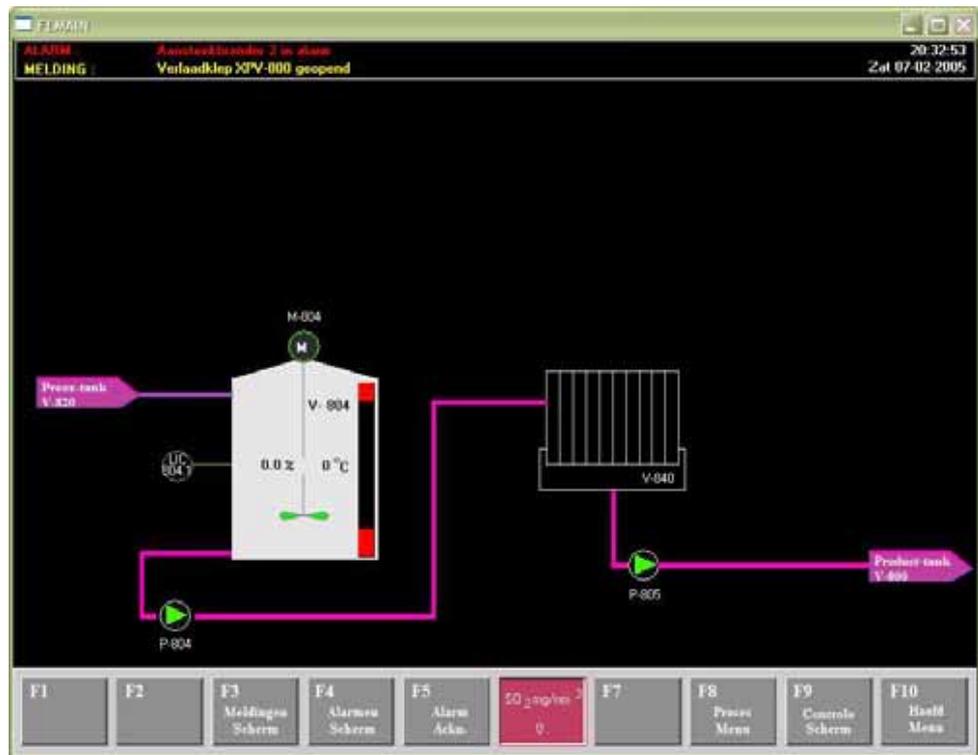


Oxidatie

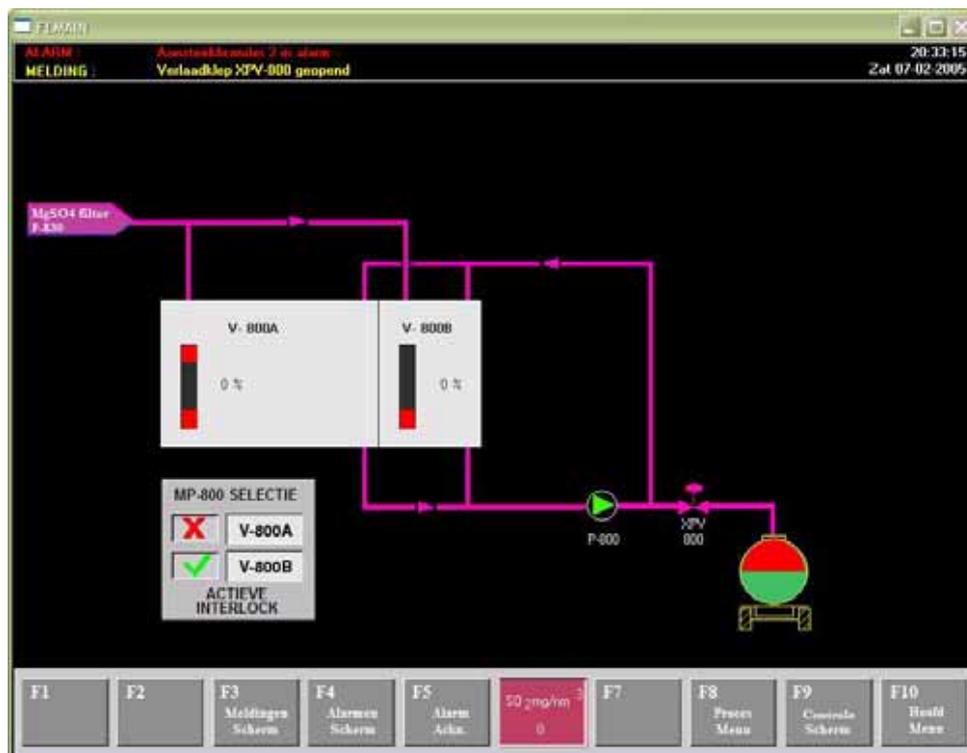




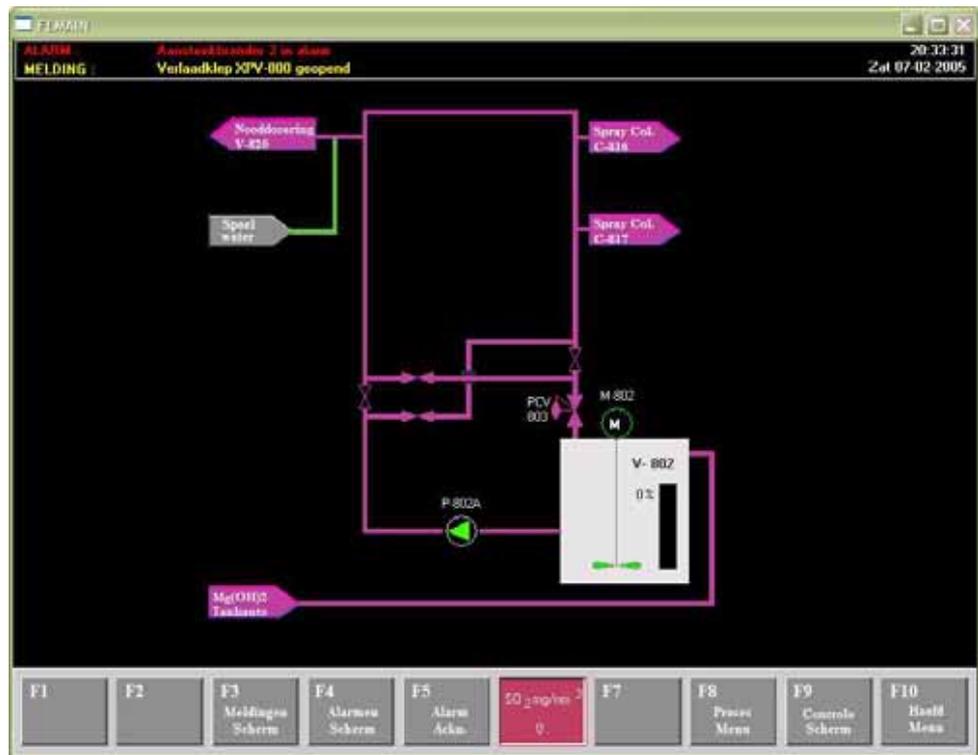
V-804 en Filterpers



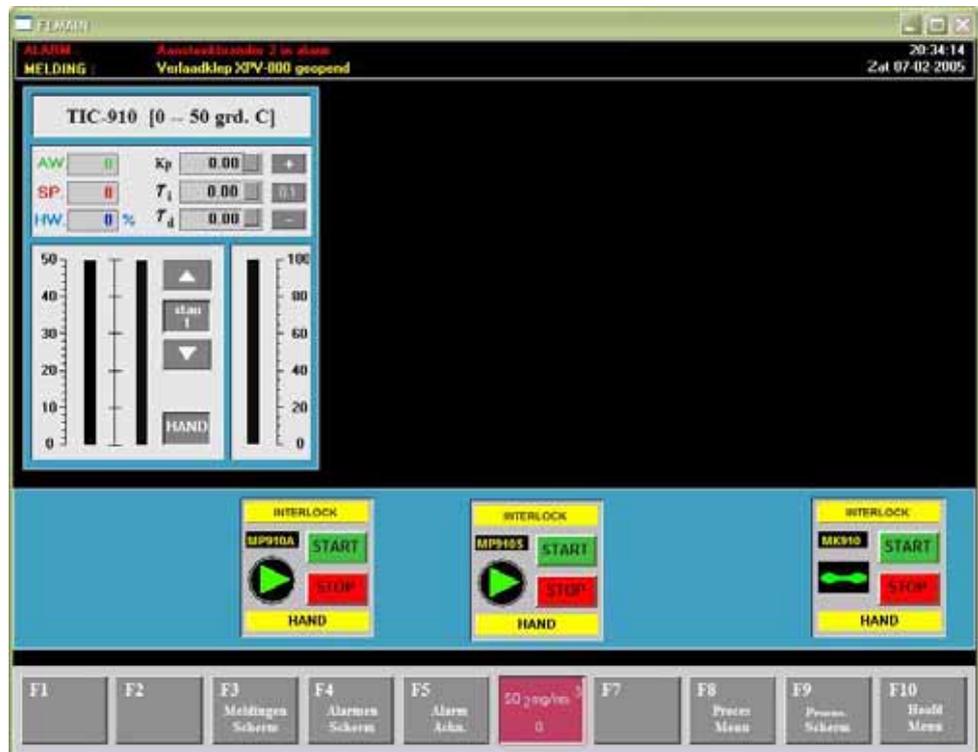
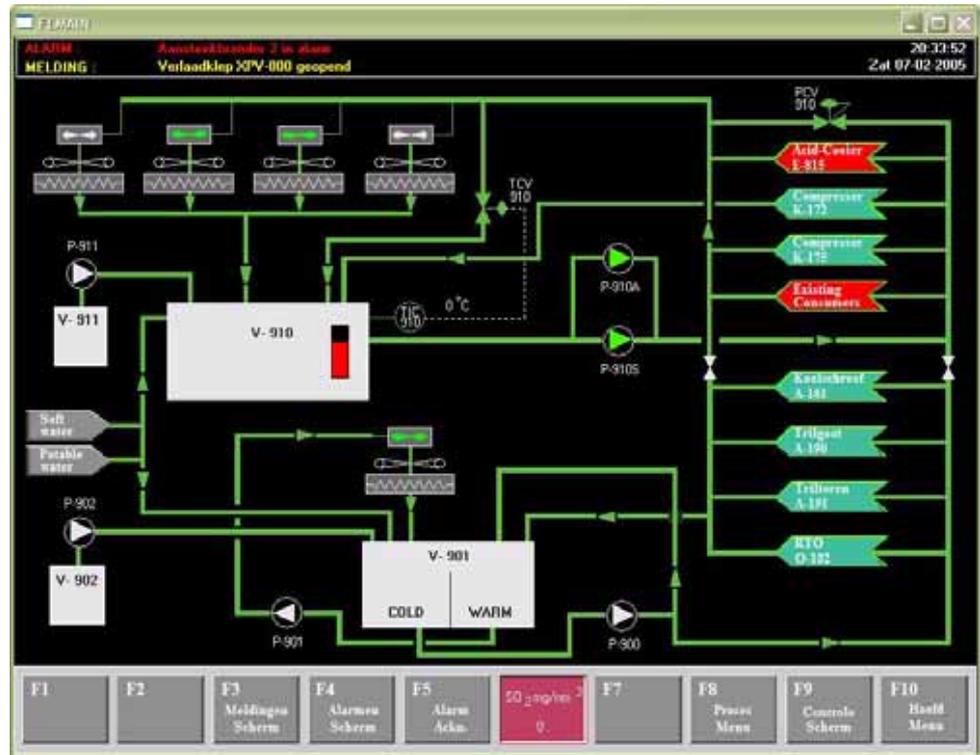
Opslag en verlading



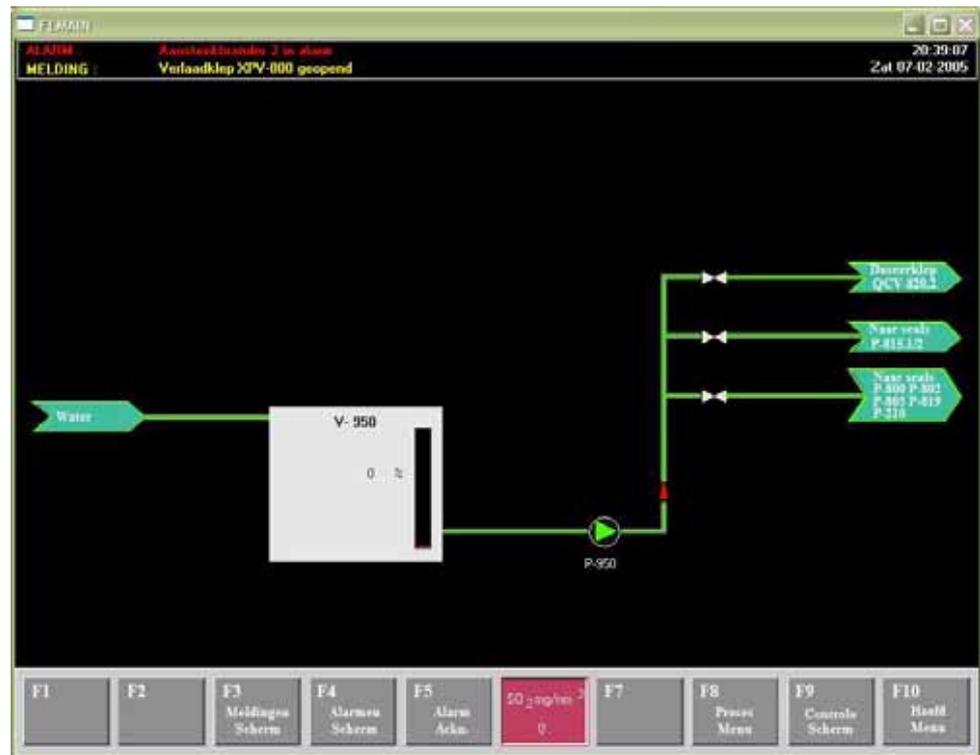
Mg(OH)₂



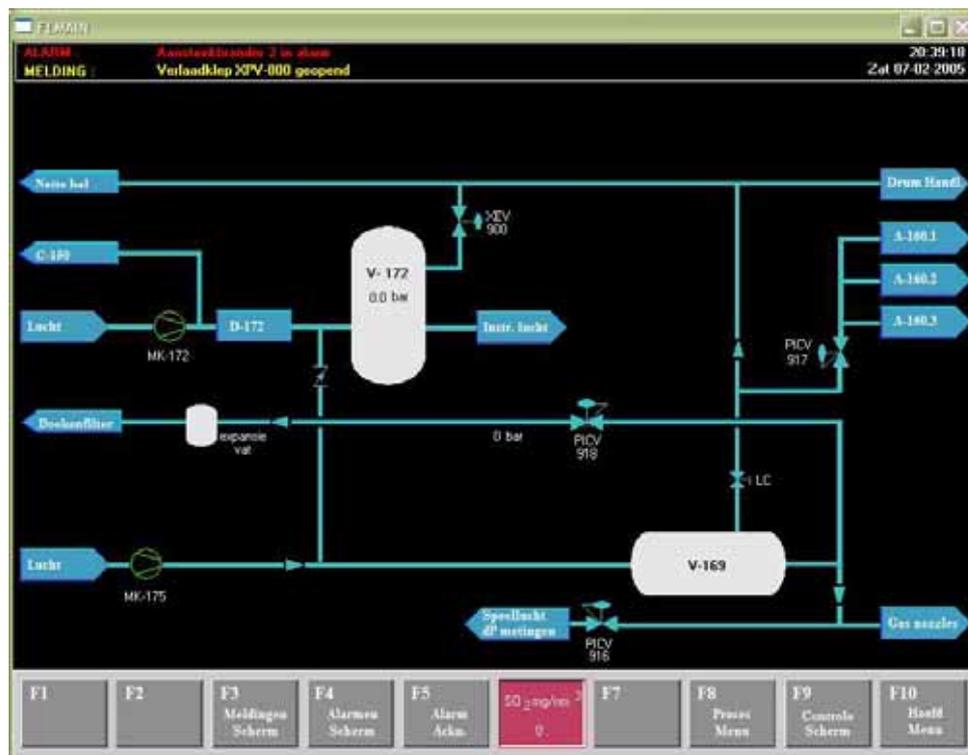
Koelwater



Sealwater



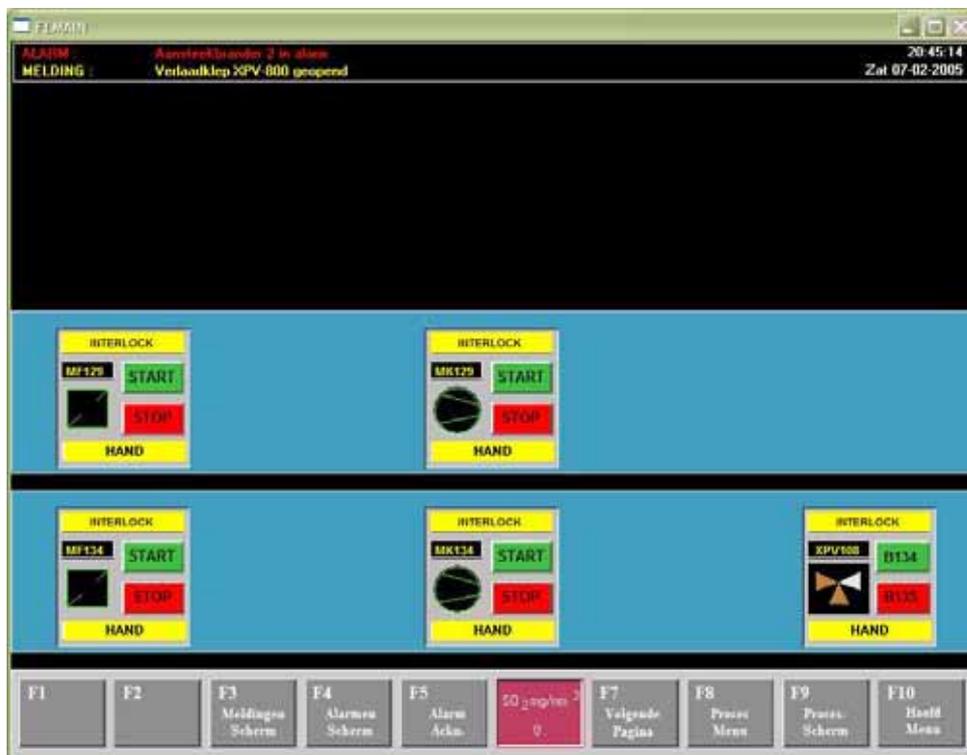
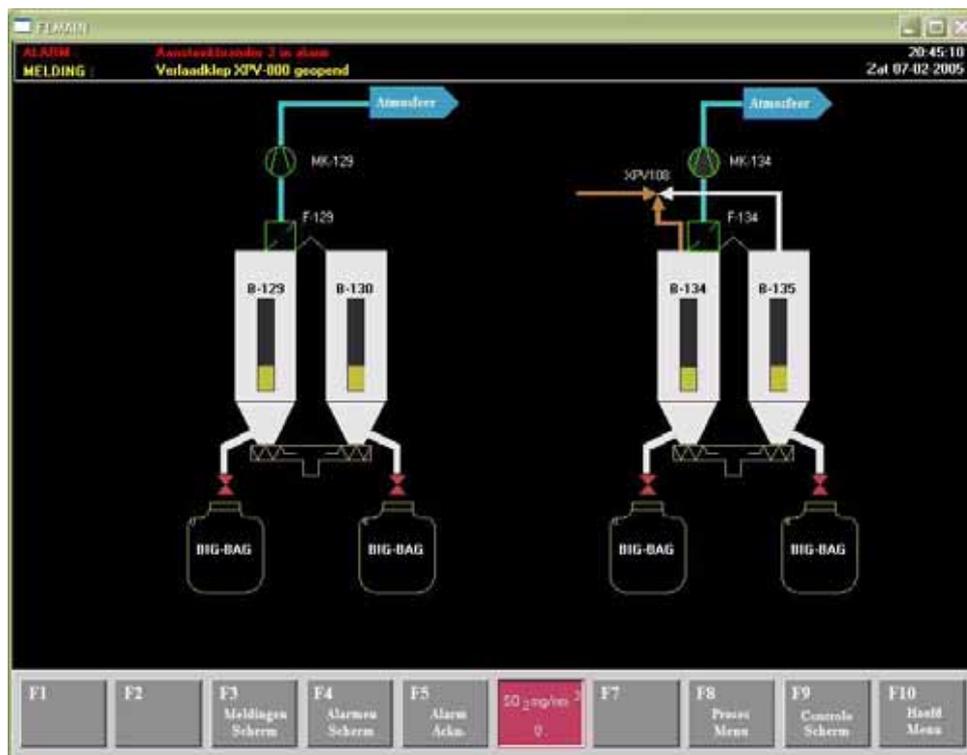
Perslucht



Niveau's

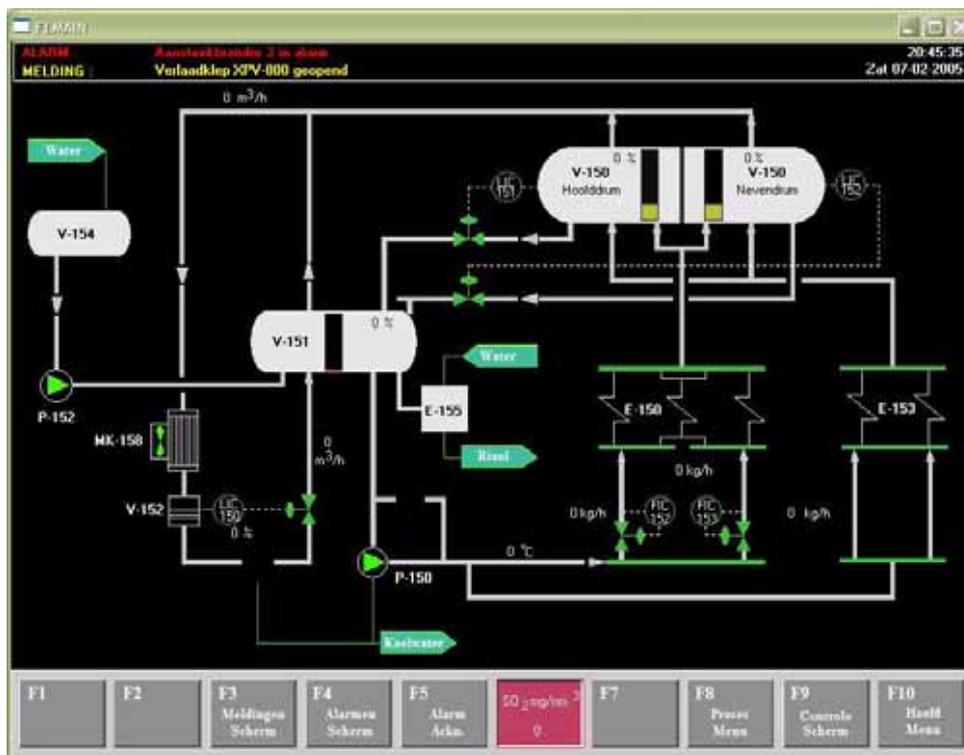


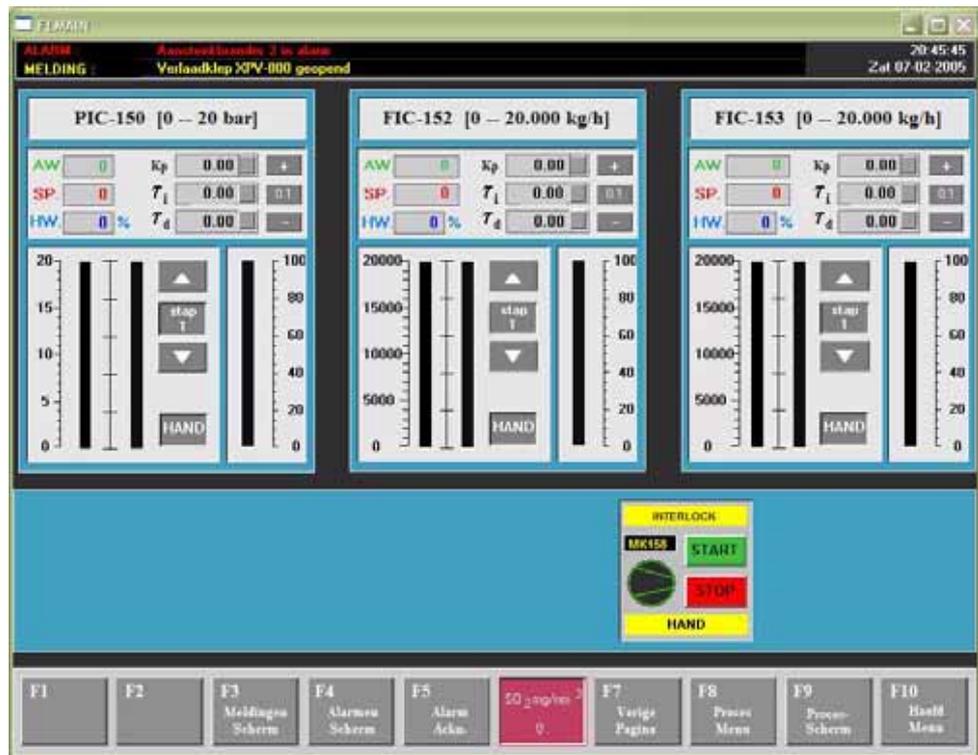
Intern transport





Stoomsysteem





SECTION 3

Alarmen in SCADA applicatie

De alarm definitie voor het SCADA systeem is in dit hoofdstuk opgenomen.

3-1	Alarmen in SCADA	52
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3-1 Alarmen in SCADA

De definitie van dejalarmen zoals deze aanwezig zijn in de alarm logger van FactoryLink zijn in dit hoofdstuk opgenomen.

Groep	Nummer	Tag naam	Cond	Limiet	Deadband	Alarm tekst	VAR1	VAR2	VAR3	VAR4	Prioriteit	Area	Status tag
ALARM	220	NOODUIT	ON	0		Noodstop brander bediend			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	270	KETEL_AVW	ON	0		Aanvullende ketelvoorwaarden niet voldaan			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	310	TS_169	ON	0		Temperatuur bed 1 > 1000 grd. C			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	320	TS_170	ON	0		Temperatuur bed 2 > 1000 grd. C			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	330	DPS_160	ON	0		Bedhoogte < minimaal			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	340	WATCHDOG	ON	0		Watchdog storing			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	350	PAH_163	ON	0		Vuurhaardruk > + 0.1 mbar			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	360	PS_180	ON	0		Stuurlicht druk < 4 bar			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	370	PS_174	ON	0		Aansteek luchtdruk < 30 mbar			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	380	PS_171_1	ON	0		Gasdruk < 2 bar			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	390	PS_171_2	ON	0		Gasdruk > 3 bar			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	400	XZS_168_169	ON	0		Hoofdasventielen niet gesloten			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	410	FS_198_199	ON	0		VerbrandingsluchtfLOW < minimaal			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	420	TZS_183	ON	0		Gasregelklep bed1 niet in startpos			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	430	TS_184	ON	0		VerbrandingsluchtfLOW < 90 procent			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	440	FS_198199	ON	0		Vlamstoring hoofdbranders			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	450	VLAM_ST	ON	0		Verbrandingsluchtdruk < minimaal			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	460	PDS_158	ON	0		Gaslek in hoofdventielen			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	470	XS_173	ON	0		Aansteekbrander 1 in alarm			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	480	BR_152	OFF	0		Aansteekbrander 2 in alarm			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	490	BR_153	OFF	0		Klep XEV-815 in alarm			DATE TIME	SECTIME	7	BRANDER_S	
ALARM	850	KLEPPEN_AL[16]	ON	0		Snelsluit klep PV-1008 in alarm			DATE TIME	SECTIME	7	KLEP_ALARM	
ALARM	860	KLEPPEN_AL[17]	ON	0		Klep XEV-818 in alarm			DATE TIME	SECTIME	7	KLEP_ALARM	
ALARM	870	KLEPPEN_AL[21]	ON	0		Klep XEV-800 in alarm			DATE TIME	SECTIME	7	KLEP_ALARM	
ALARM	880	KLEPPEN_AL[22]	ON	0		Klep XEV-162.1 in alarm			DATE TIME	SECTIME	7	KLEP_ALARM	
ALARM	890	KLEPPEN_AL[24]	ON	0		Klep XEV-162.2 in alarm			DATE TIME	SECTIME	7	KLEP_ALARM	
ALARM	900	KLEPPEN_AL[25]	ON	0		Klep XEV-162.3 in alarm			DATE TIME	SECTIME	7	KLEP_ALARM	
ALARM	910	KLEPPEN_AL[26]	ON	0		Roerwerk M-802 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1010	MOTOR_AL[10]	ON	0		Roerwerk K-804 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1020	MOTOR_AL[11]	ON	0		Pomp P-800 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1030	MOTOR_AL[12]	ON	0		Pomp P-802A in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1040	MOTOR_AL[16]	ON	0		Schroef A-150 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1090	MOTOR_AL[42]	ON	0		Schroef A-151 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1100	MOTOR_AL[43]	ON	0		Schroef A-161 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1110	MOTOR_AL[44]	ON	0		Schroef A-162 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1120	MOTOR_AL[45]	ON	0		Schroef A-150.1 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1130	MOTOR_AL[47]	ON	0		Schroef A-152 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1140	MOTOR_AL[48]	ON	0		Sluis A-160.3 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1150	MOTOR_AL[49]	ON	0		Sluis A-160.1 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1160	MOTOR_AL[50]	ON	0		Sluis A-160.2 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1170	MOTOR_AL[52]	ON	0		Pomp P-805 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1180	MOTOR_AL[53]	ON	0		Shredder A-153 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1190	MOTOR_AL[54]	ON	0		Blower K-150 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1200	MOTOR_AL[55]	ON	0		Blower K-151.1 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1210	MOTOR_AL[56]	ON	0		Blower K-152 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1220	MOTOR_AL[57]	ON	0		Pomp P-804 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1240	MOTOR_AL[59]	ON	0		Schroef A-152.1 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1250	MOTOR_AL[60]	ON	0		Pomp P-815 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1260	MOTOR_AL[62]	ON	0		Blower K-158 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1270	MOTOR_AL[63]	ON	0		Blower K-151.2 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1280	MOTOR_AL[64]	ON	0		Pomp P-815.2 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1290	MOTOR_AL[65]	ON	0		Blower K-818.2 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1300	MOTOR_AL[66]	ON	0		Pomp P-818.2 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1310	MOTOR_AL[70]	ON	0		Pomp P-816A in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1320	MOTOR_AL[71]	ON	0		Pomp P-816B in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	
ALARM	1330	MOTOR_AL[72]	ON	0		Blower K-172 in alarm			DATE TIME	SECTIME	7	MOTOR_ALARM	

Groep	Nummer	Tag naam	Cond	Limiet	Deadband	Alarm tekst	VAR1	VAR2	VAR3	VAR4	Prioriteit	Area	Status tag
ALARM	1340	MOTOR_AL[73]	ON	0		Blower K-175 in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1350	MOTOR_AL[75]	ON	0		Pomp P-950 in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1360	MOTOR_AL[77]	ON	0		Blower K-820B in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1370	MOTOR_AL[78]	ON	0		Pomp P-910A in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1380	MOTOR_AL[79]	ON	0		Pomp P-910S in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1390	MOTOR_AL[81]	ON	0		Snelsluitklep XEV-157 in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1400	MOTOR_AL[82]	ON	0		Wasmachine in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1410	MOTOR_AL[83]	ON	0		Blower K-818.1 in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1420	MOTOR_AL[84]	ON	0		Pomp P-819 in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1430	MOTOR_AL[86]	ON	0		Blower K-820A in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	1460	MOTOR_AL[89]	ON	0		Schroef A-151.1 in alarm			DATE TIME	SECTIME 7	7	MOTOR_ALARM	
ALARM	2390	LI_800_1	>=	0		Niveau indicatie opslag-tank V-800-A			DATE TIME	SECTIME 9	9	RI-TREND_TAGS	
ALARM	2500	FISAL_158	ON	0		Verbrandingslucht bed 2 laag			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2510	FISAL_158	ON	0		Verbrandingslucht bed 2 zeer laag			DATE TIME	SECTIME 8	8	TABLE1	
ALARM	2520	FISAL_159	ON	0		Verbrandingslucht bed 1 laag			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2530	FISAL_159	ON	0		Verbrandingslucht bed 1 zeer laag			DATE TIME	SECTIME 8	8	TABLE1	
ALARM	2550	FAH_171	ON	0		Aardgasflow naar bed 1 hoog			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2560	FAL_171	ON	0		Aardgasflow naar bed 1 laag			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2570	FAH_172	ON	0		Aardgasflow naar bed 2 hoog			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2580	FAL_172	ON	0		Aardgasflow naar bed 2 laag			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2590	FSAL_815_1	ON	0		Lage flow naar scrubber C-815			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2600	FSAL_815_2	ON	0		Lage flow naar quench C-815			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2670	FAL_911	OFF	0		Lage flow koelwater E-815			DATE TIME	SECTIME 9	9	TABLE1	ALARM_STAT[19]
ALARM	2690	FAL_913	OFF	0		Lage flow koelwater nieuw->oud systeem			DATE TIME	SECTIME 9	9	TABLE1	ALARM_STAT[44]
ALARM	2700	FSAL_951	OFF	0		Lage flow sealwater			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	2830	LSAH_118	OFF	0		Hoog niveau vat B-163			DATE TIME	SECTIME 9	9	TABLE1	ALARM_STAT[30]
ALARM	2900	LALL_152	ON	0		Zeer laag niveau nevendrum V-150			DATE TIME	SECTIME 8	8	TABLE1	
ALARM	2980	LS_921	ON	0		Niveau alarm doekenfilter 2, F-150			DATE TIME	SECTIME 9	9	TABLE1	ALARM_STAT[27]
ALARM	2990	LA_921	OFF	0		Niveau meting doekenfilter 2 F-150 defect			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3000	LS_922	ON	0		Niveau alarm doekenfilter 3, F-150			DATE TIME	SECTIME 9	9	TABLE1	ALARM_STAT[28]
ALARM	3010	LA_922	OFF	0		Niveau meting doekenfilter 3 F-150 defect			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3020	LSAH_167	ON	0		Hoog niveau bunker B-150			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3030	LSAH_167	ON	0		Laag niveau bunker B-150			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3040	LSAH_168	ON	0		Hoog niveau bunker B-151			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3050	LSAL_168	ON	0		Laag niveau bunker B-151			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3060	LSALL_800_2	OFF	0		Zeer laag niveau in opslagtank V-800A			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[33]
ALARM	3070	LSAHH_800_3	OFF	0		Zeer hoog niveau in opslagtank V-800A			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[34]
ALARM	3080	LAH_800_4	ON	0		Hoog niveau produkt tank V-800B			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3090	LAHH_800_4	ON	0		Zeer hoog niveau produkt tank V-800B			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[35]
ALARM	3100	LSALL_800_5	OFF	0		Zeer laag niveau in opslagtank V-800B			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[18]
ALARM	3110	LSAHH_800_7	OFF	0		Hoog niveau in tankwagen			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[40]
ALARM	3120	LSALL_802_2	OFF	0		Zeer laag niveau in hydroxide tank V-802			DATE TIME	SECTIME 8	8	TABLE1	
ALARM	3130	LAH_800_1	ON	0		Zeer hoog niveau produkt tank V-800A			DATE TIME	SECTIME 8	8	TABLE1	
ALARM	3140	LAH_800_1	ON	0		Hoog niveau produkt tank V-800A			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3150	LAL_800_1	ON	0		Laag niveau produkt tank V-800A			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3160	LALL_800_1	ON	0		Zeer laag niveau produkt tank V-800A			DATE TIME	SECTIME 8	8	TABLE1	
ALARM	3170	LAHH_802_1	ON	0		Zeer hoog niveau in hydroxide tank V-802			DATE TIME	SECTIME 8	8	TABLE1	
ALARM	3180	LAH_802_1	ON	0		Hoog niveau in hydroxide tank V-802			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3190	LAL_802_1	ON	0		Laag niveau in hydroxide tank V-802			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3200	LAH_804_1	ON	0		Hoog niveau in eind-ox tank V-804			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3210	LAL_804_1	ON	0		Laag niveau in eind-ox tank V-804			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3220	LSALL_804_2	OFF	0		Zeer laag niveau in final ox. tank V-804			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[36]
ALARM	3230	LSAHH_804_3	OFF	0		Zeer hoog niveau in final ox. tank V-804			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[37]
ALARM	3240	LAL_815_1	ON	0		Laag niveau (<35) in scrubber C-815			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3250	LAH_815_1	ON	0		Hoog niveau (>70) in scrubber C-815			DATE TIME	SECTIME 9	9	TABLE1	
ALARM	3260	LAL_815_2	OFF	0		Zeer laag niveau in scrubber C-815			DATE TIME	SECTIME 8	8	TABLE1	ALARM_STAT[38]
ALARM	3270	LAH_816	OFF	0		Hoog niveau waskolom C-816			DATE TIME	SECTIME 9	9	TABLE1	

Groep	Nummer	Tag naam	Cond	Limiet	Deadband	Alarm tekst	VAR1	VAR2	VAR3	VAR4	Prioriteit	Area	Status tag
ALARM	3280	LAH_817	OFF	0		Hoog niveau waskolom C-817			DATE TIME	SECTIME	9	TABLE1	
ALARM	3290	LAH_818	OFF	0		Hoog niveau in waskolom C-818			DATE TIME	SECTIME	9	TABLE1	
ALARM	3300	LAHH_820_1	ON	0		Hoog niveau pompvat V-820 uit			DATE TIME	SECTIME	8	TABLE1	
ALARM	3310	LAH_820_1	ON	0		Hoog niveau pompvat V-820 uit			DATE TIME	SECTIME	9	TABLE1	
ALARM	3320	LAL_820_1	ON	0		Laag niveau pompvat V-820 uit			DATE TIME	SECTIME	9	TABLE1	
ALARM	3330	LSALL_820_2	OFF	0		Zeer laag niveau pompvat V-820 uit			DATE TIME	SECTIME	8	TABLE1	ALARM_STAT[41]
ALARM	3340	LSALL_820_3	OFF	0		Zeer laag niveau pompsump V-820			DATE TIME	SECTIME	8	TABLE1	ALARM_STAT[42]
ALARM	3360	LSAL_910	OFF	0		Laag niveau in koelwater tank V-910			DATE TIME	SECTIME	8	TABLE1	ALARM_STAT[21]
ALARM	3370	LSALL_910	OFF	0		Zeer laag niveau in koelwater tank V-910			DATE TIME	SECTIME	8	TABLE1	ALARM_STAT[22]
ALARM	3380	LAL_913	ON	0		Laag niveau in sealwater tank V-950			DATE TIME	SECTIME	9	TABLE1	
ALARM	3430	TS_155_1	ON	0		Buitentemperatuur < +1 grad.C			DATE TIME	SECTIME	9	TABLE1	
ALARM	3440	TS_155_2	ON	0		Buitentemperatuur < -5 grad.C			DATE TIME	SECTIME	9	TABLE1	
ALARM	3450	TAH_186	ON	0		Hoge temperatuur in katbunker B-150			DATE TIME	SECTIME	9	TABLE1	
ALARM	3470	TAH_187	ON	0		Hoge temperatuur in katbunker B-151			DATE TIME	SECTIME	9	TABLE1	
ALARM	3530	TAH_192	ON	0		Hoge temperatuur in katbunker B-150			DATE TIME	SECTIME	9	TABLE1	
ALARM	3540	TAHH_192	ON	0		Zeer hoge temperatuur in katbunker B-150			DATE TIME	SECTIME	8	TABLE1	
ALARM	3550	TAH_193	ON	0		Hoge temperatuur in katbunker B-150			DATE TIME	SECTIME	9	TABLE1	
ALARM	3560	TAHH_193	ON	0		Zeer hoge temperatuur in katbunker B-150			DATE TIME	SECTIME	8	TABLE1	
ALARM	3570	TAH_194	ON	0		Hoge temperatuur in katbunker B-151			DATE TIME	SECTIME	9	TABLE1	
ALARM	3580	TAHH_194	ON	0		Zeer hoge temperatuur in katbunker B-151			DATE TIME	SECTIME	8	TABLE1	
ALARM	3590	TAH_195	ON	0		Hoge temperatuur in katbunker B-151			DATE TIME	SECTIME	9	TABLE1	
ALARM	3600	TAHH_195	ON	0		Zeer hoge temperatuur in katbunker B-151			DATE TIME	SECTIME	8	TABLE1	
ALARM	3610	TAH_813	ON	0		Temperatuur in uitlaat van C-815 > 70 grad.C			DATE TIME	SECTIME	9	TABLE1	
ALARM	3620	TAHH_813	ON	0		Temperatuur in uitlaat van C-815 > 80 grad.C			DATE TIME	SECTIME	8	TABLE1	
ALARM	3630	TAHH_813	ON	0		Mk-818 stop door hoge temp. uitlaat C-815			DATE TIME	SECTIME	8	TABLE1	
ALARM	3640	dPAH_814_1	OFF	0		Hoge verschildruk in demister van C-815			DATE TIME	SECTIME	9	TABLE1	
ALARM	3650	dPAH_814_2	ON	0		Hoge verschildruk in warmtewisselaar E-815			DATE TIME	SECTIME	9	TABLE1	
ALARM	3660	PAH_812	ON	0		Hoge druk in rookgas naar quench Z-815			DATE TIME	SECTIME	9	TABLE1	
ALARM	3670	PAHH_812	ON	0		Zeer hoge druk in rookgas naar quench Z-815			DATE TIME	SECTIME	8	TABLE1	
ALARM	3680	TAHH_814_1	OFF	0		Zeer hoge temp. in uitlaat v. koeler v. Z815			DATE TIME	SECTIME	8	TABLE1	ALARM_STAT[47]
ALARM	3690	TAH_157	ON	0		Hoge temperatuur na A-192			DATE TIME	SECTIME	9	TABLE1	
ALARM	3700	QA_151	ON	0		Percentage stof in rookgas hoog			DATE TIME	SECTIME	9	TABLE1	
ALARM	3710	QAHH_151	ON	0		Percentage stof in rookgas te hoog			DATE TIME	SECTIME	8	TABLE1	
ALARM	3720	dPAH_166	ON	0		Hoge verschildruk over doekenfilter F-150			DATE TIME	SECTIME	9	TABLE1	
ALARM	3730	dPAHH_166	ON	0		Zeer hoge verschildruk over doekenfilter			DATE TIME	SECTIME	8	TABLE1	
ALARM	3740	QAHH_811_1	ON	0		Zeer hoog gehalte SO2 in rookgas			DATE TIME	SECTIME	8	TABLE1	
ALARM	3750	QAH_811_1	ON	0		Hoog gehalte SO2 in rookgas			DATE TIME	SECTIME	9	TABLE1	
ALARM	3760	QAHH_820_2	ON	0		Zeer hoge dichtheid in V-820			DATE TIME	SECTIME	8	TABLE1	
ALARM	3770	QAH_820_2	ON	0		Hoge dichtheid in V-820			DATE TIME	SECTIME	9	TABLE1	
ALARM	3780	QAL_820_2	ON	0		Lage dichtheid in V-820			DATE TIME	SECTIME	8	TABLE1	
ALARM	3790	QALL_820_2	ON	0		Zeer lage dichtheid in V-820			DATE TIME	SECTIME	8	TABLE1	
ALARM	3800	TAL_171	ON	0		Lage temp. in rookgas naar sproeikoeler C150			DATE TIME	SECTIME	9	TABLE1	
ALARM	3810	TAH_171	ON	0		Hoge temp. in rookgas naar sproeikoeler C150			DATE TIME	SECTIME	9	TABLE1	
ALARM	3820	TAH_172	ON	0		Hoge temp. in rookgas van sproeikoeler C150			DATE TIME	SECTIME	9	TABLE1	
ALARM	3830	TAH_804	ON	0		Hoge temperatuur V-804			DATE TIME	SECTIME	9	TABLE1	
ALARM	3840	TAHH_804	ON	0		Zeer hoge temperatuur V-804			DATE TIME	SECTIME	8	TABLE1	
ALARM	3850	dPALL_160	ON	0		Bedhoogte < 10 cm			DATE TIME	SECTIME	8	TABLE1	
ALARM	3860	dPAL_160	ON	0		Bedhoogte < 15 cm			DATE TIME	SECTIME	9	TABLE1	
ALARM	3870	dPAH_160_2	ON	0		Bedhoogte > 145 cm			DATE TIME	SECTIME	9	TABLE1	
ALARM	3880	dPAHH_160_1	ON	0		Bedhoogte > 150 cm			DATE TIME	SECTIME	8	TABLE1	
ALARM	3890	TAH_160_2	ON	0		Temperatuur bed 1 > 900 grad.C			DATE TIME	SECTIME	9	TABLE1	
ALARM	3900	TAHH_160_2	ON	0		Temperatuur bed 1 > 950 grad.C			DATE TIME	SECTIME	8	TABLE1	
ALARM	3910	TAH_161_2	ON	0		Temperatuur bed 2 > 900 grad.C			DATE TIME	SECTIME	9	TABLE1	
ALARM	3920	TAHH_161_2	ON	0		Temperatuur bed 2 > 950 grad.C			DATE TIME	SECTIME	8	TABLE1	
ALARM	3930	dPS_169	OFF	0		Verschildruk doekenfilter > 18 mbar			DATE TIME	SECTIME	9	TABLE1	
ALARM	3950	PSAH_820_1	OFF	0		Hoge persdruk ventilator K-820-A			DATE TIME	SECTIME	9	TABLE1	
ALARM	3960	PSAH_820_3	OFF	0		Hoge persdruk ventilator K-820-B			DATE TIME	SECTIME	9	TABLE1	

Groep	Nummer	Tag naam	Cond	Limiet Deadband	Alarm tekst	VAR1	VAR2	VAR3	VAR4	Prioriteit	Area	Status tag
ALARM	3970	dPAH_818_8	OFF	0	Hoge verschildruk over sproeiplate C-818					9	TABLE1	
ALARM	3980	TAL_189	ON	0	Temperatuur warme hal < 5 grad. C					9	TABLE1	
ALARM	3990	LAL_171_1	OFF	0	SEAC - Laag niveau vat V-156					9	TABLE1	ALARM_STAT[29]
ALARM	4000	LAL_171_1	OFF	0	SEAC - Hoog niveau vat V-156					9	TABLE1	ALARM_STAT[32]
ALARM	4010	LAL_171_2	OFF	0	SEAC - Zeer laag niveau vat V-156					8	TABLE1	ALARM_STAT[31]
ALARM	4020	XA_152	ON	0	SEAC - Leveltransmitter defect					9	TABLE1	
ALARM	4030	PAL_156	OFF	0	SEAC - Lage druk perszijde P-156.1 / P-156.2					9	TABLE1	
ALARM	4040	TAH_156_1	ON	0	SEAC - Hoge temperatuur water naar P-156.1/2					9	TABLE1	
ALARM	4050	XA_153	ON	0	SEAC - Pomp P-156.2 loopt, geen stroming					9	TABLE1	
ALARM	4060	XA_154	ON	0	SEAC - Pomp P-156.1 loopt, geen stroming					9	TABLE1	
ALARM	4070	TA_157_1	ON	0	SEAC - Overload error P-156.2					9	TABLE1	
ALARM	4080	TA_157_2	ON	0	SEAC - Overload error P-156.1					9	TABLE1	
ALARM	4090	ZA_150	OFF	0	SEAC - Error mode control system					8	TABLE1	
ALARM	4100	PAL_129	OFF	0	SEAC - Lage inlaatdruk klepstation water					9	TABLE1	
ALARM	4110	PAL_115	OFF	0	SEAC - Lage inlaatdruk klepstation lucht					9	TABLE1	
ALARM	4120	PAH_118	OFF	0	SEAC - Lage uitlaatdruk klepstation lucht					9	TABLE1	
ALARM	4130	FSAL_811_1	OFF	0	Lage flow in SO2 analyser					9	TABLE1	
ALARM	4140	PSAH_167_1	OFF	0	Werkkluchtdruk > 6 bar					9	TABLE1	
ALARM	4150	PSAH_167_2	OFF	0	Werkkluchtdruk > 3.5 bar					9	TABLE1	
ALARM	4160	TAHH_165_2	ON	0	Zeer hoge temperatuur in freeboard					8	TABLE1	
ALARM	4170	XZA_105	OFF	0	Explosieluik van oven geopend					7	TABLE1	ALARM_STAT[6]
ALARM	4180	XA_901	OFF	0	Voor melding Buchoiz relais					9	TABLE1	
ALARM	4220	PALL_919	ON	0	Zeer lage druk perslucht systeem					8	TABLE1	
ALARM	4230	PAL_919	ON	0	Lage druk perslucht systeem					9	TABLE1	
ALARM	4370	TI_163_1	>	950	Temperatuur free-board > 950 grad.C					9	TABLE1	
ALARM	4380	VIBRO818_H	OFF	0	Voor alarm Vibrocontrol ventilator K818.1					9	TABLE1	ALARM_STAT[53]
ALARM	4390	VIBRO818_HH	OFF	0	Hoog alarm Vibrocontrol ventilator K-818.1					9	TABLE1	ALARM_STAT[43]
ALARM	4400	VIBRO_H	OFF	0	Voor alarm Vibrocontrol MK-151.1					9	TABLE1	ALARM_STAT[45]
ALARM	4410	VIBRO_HH	OFF	0	Hoog alarm Vibrocontrol MK-151.1					8	TABLE1	ALARM_STAT[50]
ALARM	4420	LS_920	ON	0	Niveau alarm doekenfilter 1, F150					9	TABLE1	
ALARM	4430	NOODVD_STATUS	OFF	0	Noodvoeding RTO in storing					9	TABLE1	
ALARM	4440	NOODVD_NET	OFF	0	Netvoeding noodvoeding RTO niet aanwezig					9	TABLE1	
ALARM	4490	TI_149_4	>	100	Hoge temperatuur perslucht voorverwarmer					8	TABLE1	ALARM_STAT[54]
ALARM	4500	VIBRO818_2_H	OFF	0	Voor alarm Vibrocontrol ventilator K818.2					9	TABLE1	ALARM_STAT[46]
ALARM	4510	VIBRO818_2_HH	OFF	0	Hoog alarm Vibrocontrol ventilator K-818.2					9	TABLE1	ALARM_STAT[51]
ALARM	4520	VIBRO151_2_H	OFF	0	Voor alarm Vibrocontrol MK-151.2					9	TABLE1	ALARM_STAT[52]
ALARM	4530	VIBRO151_2_HH	OFF	0	Hoog alarm Vibrocontrol MK-151.2					8	TABLE1	
MELD	10	SPANNING	ON	0	Spanning ketelbesturing aanwezig					7	BRANDER_M	
MELD	20	TE_162_2	ON	0	Spoeltijd overbrugging in					7	BRANDER_M	
MELD	30	VWCIRCUIT	ON	0	Voorwaarden circuit gesloten					7	BRANDER_M	
MELD	40	REGELVRIJ	ON	0	Regelvrijgave TIC automatisch					7	BRANDER_M	
MELD	50	REGELVRIJ	ON	0	Regelvrijgave branderbesturing					7	BRANDER_M	
MELD	60	TESTDRUK	ON	0	Test verbr.lucht drukschakelaar					7	BRANDER_M	
MELD	70	PROGSTART	ON	0	Programma startbereid					7	BRANDER_M	
MELD	80	REGSPOEL	ON	0	Regeling naar spoelstand					7	BRANDER_M	
MELD	90	REGSPOEL_90	ON	0	Spoellichtflow > 90 procent					7	BRANDER_M	
MELD	100	SPOELTIJD	ON	0	Spoeltijd loopt					7	BRANDER_M	
MELD	110	TS_158159	ON	0	Spoeltijd overbrugging in (> 600)					7	BRANDER_M	
MELD	120	REGSTART	ON	0	Regeling naar startstand					7	BRANDER_M	
MELD	130	PROGLOOP	ON	0	Programma loopt					7	BRANDER_M	
MELD	140	AAN_CONT	ON	0	Aansteekbranders continue					7	BRANDER_M	
MELD	150	ONTSTEK	ON	0	Ontsteking in					7	BRANDER_M	
MELD	160	XEV_168	ON	0	Hoofdventiel XEV-168 open					7	BRANDER_M	
MELD	170	XEV_169_170_171	ON	0	Hoofdventiel XEV-169 / 170 / 171 open					7	BRANDER_M	
MELD	180	HOOFDVLAM	ON	0	Hoofdvlam aanwezig					7	BRANDER_M	
MELD	190	XEV_164_165_166	ON	0	Aansteekventielen open					7	BRANDER_M	
MELD	200	XEV_170	ON	0	Hoofdbranders bed 2 uit					7	BRANDER_M	

Groep	Nummer	Tag naam	Cond	Limiet	Deadband	Alarm tekst	VAR1	VAR2	VAR3	VAR4	Prioriteit	Area	Status tag
MELD	210	XEV_171	ON	0		Hoofdbranders bed 1 uit			DATE TIME	SEC TIME	7	BRANDER_M	
MELD	960	XPV800_STAT	=	0		Verlaadklep XPV-800 geopend			DATE TIME	SEC TIME	9	KLEP_STAT	
MELD	970	XPV800_STAT	=	3		Verlaadklep XPV-800 gesloten			DATE TIME	SEC TIME	9	KLEP_STAT	
MELD	980	XPV800_RECIR	ON	0		Verlaadklep XPV-800 dicht (recirculatie)			DATE TIME	SEC TIME	9	KLEP_STAT	
MELD	990	PV1008_STAT	=	0		Snelsluit klep PV-1008 geopend			DATE TIME	SEC TIME	9	KLEP_STAT	
MELD	1000	PV1008_STAT	=	3		Snelsluit klep PV-1008 gesloten			DATE TIME	SEC TIME	9	KLEP_STAT	
MELD	1610	MA160_3_STAT	=	0		Sluis A-160.3 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1620	MA160_3_STAT	=	3		Sluis A-160.3 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1630	MA160_1_STAT	=	0		Sluis A-160.1 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1640	MA160_1_STAT	=	3		Sluis A-160.1 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1650	MA160_2_STAT	=	0		Sluis A-160.2 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1660	MA160_2_STAT	=	3		Sluis A-160.2 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1670	MA161_STAT	=	0		Schroef A-161 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1680	MA161_STAT	=	3		Schroef A-161 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1690	MA162_STAT	=	0		Schroef A-162 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1700	MA162_STAT	=	3		Schroef A-162 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1750	MA173_STAT	=	0		Pomp P-804 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1760	MA173_STAT	=	3		Pomp P-804 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1770	MA179_STAT	=	0		Sluis A-179 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1780	MA179_STAT	=	3		Sluis A-179 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1910	MK151_STAT	=	0		Blower K-151 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1920	MK151_STAT	=	3		Blower K-151 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1930	MK152_STAT	=	0		Blower K-152 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1940	MK152_STAT	=	3		Blower K-152 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1950	MK910_STAT	=	0		Ventilator K-910 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1960	MK910_STAT	=	3		Ventilator K-910 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1970	MK172_STAT	=	0		Blower K-172 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1980	MK172_STAT	=	3		Blower K-172 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	1990	MK175_STAT	=	0		Blower K-175 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2000	MK175_STAT	=	3		Blower K-175 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2010	MK151_2_STAT	=	0		Blower K-151.2 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2020	MK151_2_STAT	=	3		Blower K-151.2 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2030	MP815_2_STAT	=	0		Pomp P-815.2 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2040	MP815_2_STAT	=	3		Pomp P-815.2 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2050	MK818_2_STAT	=	0		Blower K-818.2 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2060	MK818_2_STAT	=	3		Blower K-818.2 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2070	MP910A_STAT	=	0		Pomp P-910A running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2080	MP910A_STAT	=	3		Pomp P-910A stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2090	MP910S_STAT	=	0		Pomp P-910S running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2100	MP910S_STAT	=	3		Pomp P-910S stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2110	MP950_STAT	=	0		Pomp P-950 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2120	MP950_STAT	=	3		Pomp P-950 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2130	MK818_STAT	=	0		Blower K-818 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2140	MK818_STAT	=	3		Blower K-818 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2150	MK820A_STAT	=	0		Blower K-820A running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2160	MK820A_STAT	=	3		Blower K-820A stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2170	MK820B_STAT	=	0		Blower K-820B running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2180	MK820B_STAT	=	3		Blower K-820B stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2190	MP800_STAT	=	0		Pomp P-800 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2200	MP800_STAT	=	3		Pomp P-800 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2210	MP802A_STAT	=	0		Pomp P-802A running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2220	MP802A_STAT	=	3		Pomp P-802A stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2230	MP805_STAT	=	0		Pomp P-805 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2240	MP805_STAT	=	3		Pomp P-805 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2250	MP815_STAT	=	0		Pomp P-815 running			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2260	MP815_STAT	=	3		Pomp P-815 stop			DATE TIME	SEC TIME	9	MOTOR_STAT	
MELD	2270	MP816A_STAT	=	0		Pomp P-816A running			DATE TIME	SEC TIME	9	MOTOR_STAT	

Groep	Nummer	Tag naam	Cond	Limiet	Deadband	Alarm tekst	VAR1	VAR2	VAR3	VAR4	Prioriteit	Area	Status tag
MELD	2280	MP816A_STAT	=	3		Pomp P-816A stop				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2290	MP816B_STAT	=	0		Pomp P-816B running				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2300	MP816B_STAT	=	3		Pomp P-816B stop				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2310	MP816C_STAT	=	0		Wasmachine running				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2320	MP816C_STAT	=	3		Wasmachine stop				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2330	MP819_STAT	=	0		Pomp P-819 running				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2340	MP819_STAT	=	3		Pomp P-819 stop				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2350	MM802_STAT	=	0		Roerwerk M-802 running				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2360	MM802_STAT	=	3		Roerwerk M-802 stop				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2370	MM804_STAT	=	0		Roerwerk M-804 running				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2380	MM804_STAT	=	3		Roerwerk M-804 stop				DATE TIME SECTIME 9	9	MOTOR_STAT	MOTOR_STAT
MELD	2420	SE05_RUN	ON	0		Sequence 5 - Besturing doekenfilter running				DATE TIME SECTIME 9	9	SEQUENCES	SEQUENCES
MELD	2450	RESET_SEQ5	ON	0		Sequence 5 - Besturing doekenfilter stop				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4490	EO_150	ON	0		SEAC - Besturing klepstation beschikbaar				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4500	EO_151	ON	0		SEAC - 24VDC beschikbaar				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4510	EO_152	ON	0		SEAC - 24VAC beschikbaar				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4520	EO_153	ON	0		SEAC - 3 fasen spanning beschikbaar				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4530	FO_156_1	ON	0		SEAC - P-156.1 O.K.				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4540	FO_156_2	ON	0		SEAC - P-156.2 O.K.				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4550	MO_156_1	ON	0		SEAC - P-156.1 aansturing				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4560	MO_156_2	ON	0		SEAC - P-156.2 aansturing				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4570	XS_112_1	ON	0		SEAC - XEV-112 licht, spanning aanwezig				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4580	XS_112	ON	0		SEAC - XEV-112 eindstand licht				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4590	XS_113_1	ON	0		SEAC - XEV-113 water, spanning aanwezig				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4600	XS_113	OFF	0		SEAC - XEV-113 eindstand water				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4610	FL_170	>	30		SEAC - Water injectie gestart				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4620	SEAC_SB	ON	0		SEAC - Control system stand-by				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4630	LIC815_1_VRU	ON	0		Vrijgave niveau regeling LIC-815.1 (quench)				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4640	ALLTAGSAUTO	ON	0		Alle motoren, pompen en kleppen in "AUTO"				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4650	M_200	ON	0		Sib & Sludge Roerwerk M-200 running				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4660	M_201	ON	0		Sib & Sludge Roerwerk M-201 running				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4670	P_210	ON	0		Sib & Sludge Pomp P-210 running				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4680	XEV_201	ON	0		Sib & Sludge Klep XEV-201 open				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4681	XEV_201	OFF	0		Sib & Sludge Klep XEV-211 open				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4690	XEV_200	ON	0		Sib & Sludge Klep XEV-200 open				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4700	P_210_FREQ	ON	0		Sib & Sludge Storing freq, regelaar P-210				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4701	P_210_STOR	ON	0		Sib & Sludge Storing pomp P-210				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4710	M_201_STOR	ON	0		Sib & Sludge Storing roerwerk M-201				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4720	LSLL_201	ON	0		Sib & Sludge Laag niveau V-201				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4730	LSH_201	ON	0		Sib & Sludge Hoog niveau V-201				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4740	LSLL_200	ON	0		Sib & Sludge Laag niveau V-200				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4750	LSL_200	ON	0		Sib & Sludge Vooralarm laag niveau V-200				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4751	LSL_201	ON	0		Sib & Sludge Vooralarm laag niveau V-201				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4760	M_200_STOR	ON	0		Sib & Sludge Storing roerwerk M-200				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4780	LSH_200	ON	0		Sib & Sludge Hoog niveau V-200				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4790	SLIB_SP	ON	0		Sib & Sludge Spanning aanwezig				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4800	TZS_176_O	ON	0		Regelklep TCv-176 geheel open				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4810	TZS_176_D	ON	0		Regelklep TCv-176 geheel dicht				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4820	LI_802_1	<=	40		Niveau hydroxide vat V-802 < 40 - bestellen				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4840	NO_INTERLOCK	OFF	0		Geen bypass interlock mogelijk vanuit scada				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4850	NO_INTERLOCK	OFF	0		Stuetschakelaar bypass interlock bediend				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4860	DOEKHEAT1	ON	0		Verwarming doekenfilter conus 1 in bedrijf				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4870	DOEKHEAT2	ON	0		Verwarming doekenfilter conus 2 in bedrijf				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4875	DOEKHEAT3	ON	0		Verwarming doekenfilter conus 3 in bedrijf				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4880	DOEKHEATKOP	ON	0		Verwarming doekenfilter kop in bedrijf				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4890	VIBRO_R	ON	0		VibroControl MK-151 in bedrijf				DATE TIME SECTIME 9	9	TABLE2	TABLE2
MELD	4900	NOODVD_STATUS	ON	0		Noodvoeding RTO stand-by				DATE TIME SECTIME 9	9	TABLE2	TABLE2

Groep	Nummer	Tag naam	Cond	Limiet	Deadband	Alarm tekst	VAR1	VAR2	VAR3	VAR4	Prioriteit	Area	Status tag
MELD	4910	NOODVD_NET	ON	0		Netvoeding noodvoeding RTO aanwezig			DATE TIME	SECTIME	9	TABLE2	
MELD	5000	XEV162_1_STAT	=	0		Uitvoerklap XEV-162.1 is geopend			DATE TIME	SECTIME	9	KLEP_STAT	
MELD	5010	XEV162_1_STAT	=	3		Uitvoerklap XEV-162.1 is gesloten			DATE TIME	SECTIME	9	KLEP_STAT	
MELD	5020	XEV162_2_STAT	=	0		Uitvoerklap XEV-162.2 is geopend			DATE TIME	SECTIME	9	KLEP_STAT	
MELD	5030	XEV162_2_STAT	=	3		Uitvoerklap XEV-162.2 is gesloten			DATE TIME	SECTIME	9	KLEP_STAT	
MELD	5040	XEV162_3_STAT	=	0		Uitvoerklap XEV-162.3 is geopend			DATE TIME	SECTIME	9	KLEP_STAT	
MELD	5050	XEV162_3_STAT	=	3		Uitvoerklap XEV-162.3 is gesloten			DATE TIME	SECTIME	9	KLEP_STAT	
MELD	1530	MA151_STAT	=	0		Schroef A-151 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1540	MA151_STAT	=	3		Schroef A-151 stop			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1550	MA152_1_STAT	=	0		Schroef A-152.1 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1560	MA152_1_STAT	=	3		Schroef A-152.1 stop			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1590	MA152_STAT	=	0		Schroef A-152 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1600	MA152_STAT	=	3		Schroef A-152 stop			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1790	MA182_STAT	=	0		Schroef A-150.1 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1800	MA182_STAT	=	3		Schroef A-150.1 stop			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1510	MA150_STAT	=	0		Schroef A-150 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1520	MA150_STAT	=	3		Schroef A-150 stop			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1730	MA168_2_STAT	=	0		Schroef A-151.1 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1740	MA168_2_STAT	=	3		Schroef A-151.1 stop			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1710	MA153_STAT	=	0		Shredder A-153 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1720	MA153_STAT	=	3		Shredder A-153 stop			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1570	MA157_STAT	=	0		Sneisluitklap XEV-157 open			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1580	MA157_STAT	=	3		Sneisluitklap XEV-157 dicht			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1890	MK150_STAT	=	0		Blower K-150 running			DATE TIME	SECTIME	9	MOTOR_STAT	
MELD	1900	MK150_STAT	=	3		Blower K-150 stop			DATE TIME	SECTIME	9	MOTOR_STAT	

SECTION 4

Rapporten SCADA applicatie

De rapport layouts het SCADA systeem zijn in dit hoofdstuk opgenomen.

4-1	Rapporten in SCADA	60
	Shift rapport	60
	Alarmen in shift	60
	SO2 rapport	61
	SO2 alarmen	62

4-1 Rapporten in SCADA

De definitie van de rapporten zoals deze aanwezig zijn in de applicatie voor het SCADA systeem FactoryLink zijn in dit hoofdstuk opgenomen.

Shift rapport

Datum : Sun 31-10-2004 Tijd : 07:00:05 uur Dienst : 23:00 - 07:00 uur

SHIFT RAPPORT

VERVELBEDOUVEN		
Onschrijving:	gemiddeld	cumulatief
Katdosering via A-182	0 kg/h	0 kg
Gasbranders in bedrijf x-age up-time	0	0 x
Gemiddelde bedhoogte	0 cm	
Verbrandingslucht hoeveelheid	0 m ³ /h	
Fluidisatie snelheid	0 m/s	
Onderdruk in oven 0-150 via PT-162	0 mbar	
Gemiddelde temperatuur in oven bed 1 + 2	0 grd.C	
Gemiddelde temperatuur in freeboard	0 grd.C	
Gemiddelde temperatuur inlaat C-150	0 grd.C	
Gemiddelde temperatuur uitlaat C-150	0 grd.C	
Gemiddelde waterflow naar C-150	0 ltr/h	0 ltr
Drukoverschil over doekenfilter	0 mbar	
Percentage stof na het doekenfilter	0 %	
Gemiddelde temperatuur na A-173	0 grd.C	
Gemiddelde waterflow over bed 1 + 2	0 kg/h	0 kg
Gemiddelde temperatuur via TE-150	0 grd.C	
Gemiddelde persluchtdruk via PT-919	0.0 bar	

ROOKGAS ONTZWELING		
Gemiddelde uitlaat temperatuur na C-815	0 grd.C	
Onderdruk in RGO installatie via PT-812	0.0 mbar	
Gemiddelde flow FT-816	0.0 m ³ /h	
Gemiddelde flow FT-817	0.0 m ³ /h	
Gemiddelde flow FT-818	0.0 m ³ /h	
Gemiddelde pH in C-816	0.00 pH	
Gemiddelde pH in C-817	0.00 pH	
Gemiddelde pH in C-818	0.00 pH	
Gemiddelde pH in U-819	0.00 pH	
Gemiddelde pH in U-820	0.00 pH	
Gemiddelde SO2 emissie	0 mgr/m ³	

Alarmen in shift

Datum : Sun 31-10-2004 Tijd : 07:02:10 uur Dienst : 23:00 - 07:00 uur

ALARMEN RAPPORT

Opkomst tijd	Tijdsduur (sec)	Groep	Alarm tekst
.....			
Einde alarm lijst			

SO2 rapport

20041031_1.txt - Notepad

File Edit Format View Help

Datum : Sun 31-10-2004 Tijd : 07:00:05 uur Dienst : 23:00 - 07:00 uur

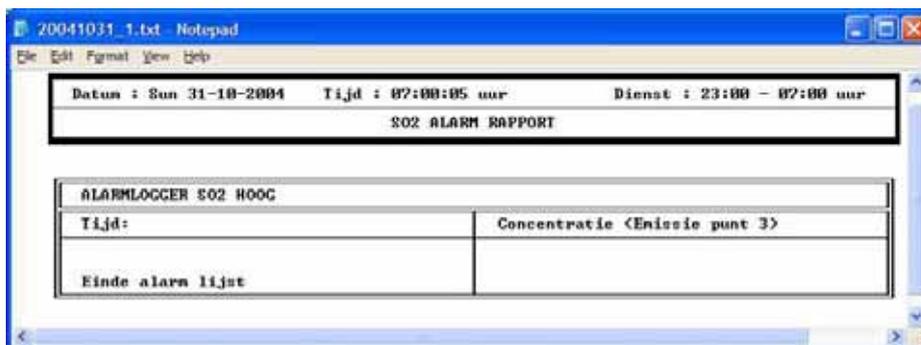
SO2 RAPPORT

Tijds interval	Halvuurs gemiddelde mg/Nm3 SO2	Halvuurs gemiddelde kg/h SO2	Cummulatief kg SO2
23:00 - 23:30	0.00	0.00	0.00
23:30 - 00:00	0.00	0.00	0.00
00:00 - 00:30	0.00	0.00	0.00
00:30 - 01:00	0.00	0.00	0.00
01:00 - 01:30	0.00	0.00	0.00
01:30 - 02:00	0.00	0.00	0.00
02:00 - 02:30	0.00	0.00	0.00
02:30 - 03:00	0.00	0.00	0.00
03:00 - 03:30	0.00	0.00	0.00
03:30 - 04:00	0.00	0.00	0.00
04:00 - 04:30	0.00	0.00	0.00
04:30 - 05:00	0.00	0.00	0.00
05:00 - 05:30	0.00	0.00	0.00
05:30 - 06:00	0.00	0.00	0.00
06:00 - 06:30	0.00	0.00	0.00
06:30 - 07:00	0.00	0.00	0.00

Tijds interval	mg/Nm3 SO2	kg/h SO2	kg SO2
23:00 - 07:00	0.00	0.00	0.00

GRENSWAARDEN <maximaal>		
	Meetpunt SO2-analyzer	Emissie-PUNT 3
SO2-concentratie	594 mg/Nm3	1800 mg/Nm3
	208 ppm	632 ppm
Hoeveelheid SO2	9 kg/h	9 kg/h
Jaarmaximum	39,5 ton	39,5 ton

SO2 alarmeren



SECTION 5

PLC Symboliek data

De PLC symboliek data is in deze paragraaf opgenomen.

5-1	PLC symboliek data	64
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5-1 PLC symboliek data

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;XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
;SYMBOLIEK FILE VOOR MOXBA METREX           Imtech Maintenance
;XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
;
;
;INGANGEN 13 KAARTEN A 32 INGANGEN
;
E 0.0      E 0.0      LS123 H NIVO B154
E 0.1      E 0.1      ----SPARE-----
E 0.2      E 0.2      LS124 L NIVO B154
E 0.3      E 0.3      ----SPARE-----
E 0.4      E 0.4      XXXXXXXXXXXXXXXXXXXX
E 0.5      E 0.5      XXXXXXXXXXXXXXXXXXXX
E 0.6      E 0.6      LS125 H NIVO B155
E 0.7      E 0.7      ----SPARE-----
;
E 1.0      E 1.0      MK129 CONTACTOR FEEDBACK
E 1.1      E 1.1      MF129 CONTACTOR FEEDBACK
E 1.2      E 1.2      VERWARMING 1 DOEKENFILTER IN BEDRIJF
E 1.3      E 1.3      VERWARMING 2 DOEKENFILTER IN BEDRIJF
E 1.4      E 1.4      VERWARMING KOP DOEKENFILTER IN BEDRIJF
E 1.5      E 1.5      ----SPARE-----
E 1.6      E 1.6      MA128 CONTACTOR FEEDBACK
E 1.7      E 1.7      MA131 CONTACTOR FEEDBACK
;
E 2.0      E 2.0      MK134 CONTACTOR FEEDBACK
E 2.1      E 2.1      MF134 CONTACTOR FEEDBACK
E 2.2      E 2.2      INBEDRIJF VIBROCONTROL MK818
E 2.3      E 2.3      H ALARM VIBROCONTROL MK818
E 2.4      E 2.4      HH ALARM VIBROCONTROL MK818
E 2.5      E 2.5      ----SPARE-----
E 2.6      E 2.6      ----SPARE-----
E 2.7      E 2.7      ----SPARE-----
;
E 3.0      E 3.0      ----SPARE-----
E 3.1      E 3.1      MA136 CONTACTOR FEEDBACK
E 3.2      E 3.2      MK128 CONTACTOR FEEDBACK
E 3.3      E 3.3      MK131 CONTACTOR FEEDBACK
E 3.4      E 3.4      LS126 L NIVO B155
E 3.5      E 3.5      LS910 L NIVO V910
E 3.6      E 3.6      LS910 LL NIVO V910
E 3.7      E 3.7      MB154 CONTACTOR FEEDBACK
;
E 4.0      E 4.0      MB155 CONTACTOR FEEDBACK
E 4.1      E 4.1      PULS KETTING MA156.2
E 4.2      E 4.2      H ALARM VIBROCONTROL MK151
E 4.3      E 4.3      HH ALARM VIBROCONTROL MK151
E 4.4      E 4.4      XZS104-1 XPV104 NAAR B129
E 4.5      E 4.5      XZS108-1 XPV108 NAAR B134
E 4.6      E 4.6      INBEDRIJF VIBROCONTROL MK151

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E 4.7      E 4.7      XZS105 EXPLOSIE LUIK OPEN
;
E 5.0      E 5.0      LS920 NIVOMELDING DOEKENFILTER
E 5.1      E 5.1      TRACING MK151 IN BEDRIJF
E 5.2      E 5.2      ----SPARE-----
E 5.3      E 5.3      xxxxxxxxxxxxxxxxxx
E 5.4      E 5.4      XZS104-2 XPV104 NAAR B130
E 5.5      E 5.5      XZS108-2 XPV108 NAAR B135
E 5.6      E 5.6      MP950 CONTACTOR FEEDBACK
E 5.7      E 5.7      dPAH818-8 SPROEIPLAAT C818 HOOG
;
E 6.0      E 6.0      xxxxxxxxxxxxxxxxxx
E 6.1      E 6.1      xxxxxxxxxxxxxxxxxx
E 6.2      E 6.2      xxxxxxxxxxxxxxxxxx
E 6.3      E 6.3      xxxxxxxxxxxxxxxxxx
E 6.4      E 6.4      xxxxxxxxxxxxxxxxxx
E 6.5      E 6.5      xxxxxxxxxxxxxxxxxx
E 6.6      E 6.6      xxxxxxxxxxxxxxxxxx
E 6.7      E 6.7      LS118 H NIVO B163
;
E 7.0      E 7.0      LS101 HH NIVO B129
E 7.1      E 7.1      LS104 HH NIVO B130
E 7.2      E 7.2      LS112 HH NIVO B134
E 7.3      E 7.3      LS115 HH NIVO B135
E 7.4      E 7.4      LS102 H NIVO B129
E 7.5      E 7.5      LS105 H NIVO B130
E 7.6      E 7.6      LS113 H NIVO B134
E 7.7      E 7.7      LS116 H NIVO B135
;
E 8.0      E 8.0      LS103 L NIVO B129
E 8.1      E 8.1      LS106 L NIVO B130
E 8.2      E 8.2      LS114 L NIVO B134
E 8.3      E 8.3      LS117 L NIVO B135
E 8.4      E 8.4      xxxxxxxxxxxxxxxxxx
E 8.5      E 8.5      LS100 H NIVO B128
E 8.6      E 8.6      xxxxxxxxxxxxxxxxxx
E 8.7      E 8.7      xxxxxxxxxxxxxxxxxx
;
E 9.0      E 9.0      xxxxxxxxxxxxxxxxxx
E 9.1      E 9.1      xxxxxxxxxxxxxxxxxx
E 9.2      E 9.2      xxxxxxxxxxxxxxxxxx
E 9.3      E 9.3      xxxxxxxxxxxxxxxxxx
E 9.4      E 9.4      xxxxxxxxxxxxxxxxxx
E 9.5      E 9.5      xxxxxxxxxxxxxxxxxx
E 9.6      E 9.6      xxxxxxxxxxxxxxxxxx
E 9.7      E 9.7      xxxxxxxxxxxxxxxxxx
;
E 10.0     E 10.0     ALARM AFZUIGING OVEN
E 10.1     E 10.1     HOOG NIVO STOFVAT AFZ.OVEN
E 10.2     E 10.2     ALARM AFZUIGING HANDLING
E 10.3     E 10.3     HOOG NIVO STOFVAT AFZ.HANDLING
E 10.4     E 10.4     MA162 CONTACTOR FEEDBACK
    
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E 10.5      E 10.5      xxxxxxxxxxxxxxxxxxxx
E 10.6      E 10.6      xxxxxxxxxxxxxxxxxxxx
E 10.7      E 10.7      xxxxxxxxxxxxxxxxxxxx
;
E 11.0      E 11.0      ----SPARE-----
E 11.1      E 11.1      TZS1760 LUCHT KLEP S150 OPEN
E 11.2      E 11.2      TZS176C LUCHT KLEP S150 DICHT
E 11.3      E 11.3      ----SPARE-----
E 11.4      E 11.4      ----SPARE-----
E 11.5      E 11.5      MGSO4-SP SPANNING AANWEZIG (VACUUMFILTER)
E 11.6      E 11.6      XZS150-2 XPV150 DICHT
E 11.7      E 11.7      XZS150-1 XPV150 OPEN
;
E 12.0      E 12.0      MA150 CONTACTOR FEEDBACK
E 12.1      E 12.1      MA151 CONTACTOR FEEDBACK
E 12.2      E 12.2      ----SPARE-----
E 12.3      E 12.3      ----SPARE-----
E 12.4      E 12.4      XZS182 STANDMELDING XEV182 OMLOOP P150
E 12.5      E 12.5      MA156 CONTACTOR FEEDBACK
E 12.6      E 12.6      MA158 CONTACTOR FEEDBACK
E 12.7      E 12.7      MA159 CONTACTOR FEEDBACK
;
E 13.0      E 13.0      MA160-1 CONTACTOR FEEDBACK
E 13.1      E 13.1      ----SPARE-----
E 13.2      E 13.2      MA179 CONTACTOR FEEDBACK
E 13.3      E 13.3      MA160-2 CONTACTOR FEEDBACK
E 13.4      E 13.4      XA901 TRAF0 IN STORING
E 13.5      E 13.5      MA153 CONTACTOR FEEDBACK
E 13.6      E 13.6      MK150 CONTACTOR FEEDBACK
E 13.7      MK151.1-RUN  MK151.1 CONTACTOR FEEDBACK
;
E 14.0      E 14.0      MK152 CONTACTOR FEEDBACK
E 14.1      E 14.1      MA173 CONTACTOR FEEDBACK
E 14.2      E 14.2      MA152.1 CONTACTOR FEEDBACK
E 14.3      E 14.3      MA178 CONTACTOR FEEDBACK
E 14.4      E 14.4      MA157 CONTACTOR FEEDBACK
E 14.5      E 14.5      MK158 CONTACTOR FEEDBACK
E 14.6      MK151.2-RUN  MK151.2 CONTACTOR FEEDBACK
E 14.7      MP815.2-RUN  MP815.2 CONTACTOR FEEDBACK
;
E 15.0      MK818.2-RUN  MK818.2 CONTACTOR FEEDBACK
E 15.1      E 15.1      ----SPARE-----
E 15.2      E 15.2      ----SPARE-----
E 15.3      E 15.3      ----SPARE-----
E 15.4      E 15.4      ----SPARE-----
E 15.5      E 15.5      FS199 VERBR.LUCHT FLOW < MIN
E 15.6      E 15.6      ----SPARE-----
E 15.7      E 15.7      MA156.1 CONTACTOR FEEDBACK
;
E 16.0      E 16.0      MP832 MOTOR LOOPT (VACUUMFILTER)
E 16.1      E 16.1      XS832 KLEPSTAND (VACUUMFILTER)
E 16.2      E 16.2      RTO NOODVOEDING STORING/STAND-BY (0/1)

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E 16.3      E 16.3      RTO NETVOEDING NIET/WEL AANWEZIG (0/1)
E 16.4      E 16.4      TS157-2 OVERLOAD ERROR P156-1 (SEAC)
E 16.5      E 16.5      FS156-1 P156-1 FLOW (SEAC)
E 16.6      E 16.6      XS154 WATER P156-1 RUN NO FLOW (SEAC)
E 16.7      E 16.7      XS153 WATER P156-2 RUN NO FLOW (SEAC)
;
E 17.0      E 17.0      MP156-2 MOTOR LOOPT (SEAC)
E 17.1      E 17.1      ----SPARE-----
E 17.2      E 17.2      ----SPARE-----
E 17.3      E 17.3      ----SPARE-----
E 17.4      E 17.4      ----SPARE-----
E 17.5      E 17.5      TS157-1 OVERLOAD ERROR P156-2 (SEAC)
E 17.6      E 17.6      FS156-2 P156-2 FLOW (SEAC)
E 17.7      E 17.7      ----SPARE-----
;
E 18.0      E 18.0      ZS150 ERROR MODE (SEAC)
E 18.1      E 18.1      ES150 GEREED VOOR BESTURING (SEAC)
E 18.2      E 18.2      ES152 24VAC AANWEZIG (SEAC)
E 18.3      E 18.3      ES151 24VDC AANWEZIG (SEAC)
E 18.4      E 18.4      TS156 WATER TEMP. P156-1/P156-2 (SEAC)
E 18.5      E 18.5      PS156 SEAC UITLAAT DRUK
E 18.6      E 18.6      ES153 VOEDING 3~ OK (SEAC)
E 18.7      E 18.7      LS171-1 L NIVO V156
;
E 19.0      E 19.0      LS171-2 H NIVO V156
E 19.1      E 19.1      XS152 WATER LEVEL TR. OFF (SEAC)
E 19.2      E 19.2      PS199 L DRUK SPOELLUCHT
E 19.3      E 19.3      ----SPARE-----
E 19.4      E 19.4      XS113-1 XEV113 TOEVOER WATER (SEAC)
E 19.5      E 19.5      ----SPARE-----
E 19.6      E 19.6      XS112-1 XEV112 TOEVOER LUCHT (SEAC)
E 19.7      E 19.7      PS129 L DRUK WATER INL.KLEPSTATION (SEAC)
;
E 20.0      E 20.0      PS115 L DRUK LUCHT INL.KLEPSTATION (SEAC)
E 20.1      E 20.1      PS118 L DRUK LUCHT UITL.KLEPSTATION (SEA
E 20.2      E 20.2      XS113 XPV EINDSTAND WATER (SEAC)
E 20.3      E 20.3      ----SPARE-----
E 20.4      E 20.4      ----SPARE-----
E 20.5      E 20.5      ----SPARE-----
E 20.6      E 20.6      TSH165-2 TEMPERATUUR BOVEN IN KETEL
E 20.7      E 20.7      ----SPARE-----
;
E 21.0      E 21.0      ----SPARE-----
E 21.1      E 21.1      XEV833 KLEP STATUS (VACUUMFILTER)
E 21.2      E 21.2      ----SPARE-----
E 21.3      E 21.3      XS112 XPV EINDSTAND LUCHT (SEAC)
E 21.4      E 21.4      XS114 WATER INJECTIE GESTART (SEAC)
E 21.5      E 21.5      LS171-1 LL NIVO V156
E 21.6      E 21.6      TS171-1 L TEMP ROOKGAS INL.C150 (SEAC)
E 21.7      E 21.7      TS171-2 H TEMP ROOKGAS INL.C150 (SEAC)
;
E 22.0      E 22.0      MP833 MOTOR LOOPT (VACUUMFILTER)

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E 22.1      E 22.1      XS833 KLEPSTAND (VACUUMFILTER)
E 22.2      E 22.2      MP831 MOTOR LOOPT (VACUUMFILTER)
E 22.3      E 22.3      MP830 MOTOR LOOPT (VACUUMFILTER)
E 22.4      E 22.4      XS912 KLEPSTAND (VACUUMFILTER)
E 22.5      E 22.5      XS805-1 KLEPSTAND (VACUUMFILTER)
E 22.6      E 22.6      XS805-2 KLEPSTAND (VACUUMFILTER)
E 22.7      E 22.7      XS830-2 KLEPSTAND (VACUUMFILTER)
;
E 23.0      E 23.0      XS830-1 KLEPSTAND (VACUUMFILTER)
E 23.1      E 23.1      XA.. THERMISCHE STORING (VACUUMFILTER)
E 23.2      E 23.2      ----SPARE-----
E 23.3      E 23.3      ----SPARE-----
E 23.4      E 23.4      SEAC BESTURING STAND-BY
E 23.5      E 23.5      ----SPARE-----
E 23.6      E 23.6      ----SPARE-----
E 23.7      E 23.7      ----SPARE-----
;
E 24.0      E 24.0      FS815-1 TOEVOER SPROEIERS C815 LAAG
E 24.1      E 24.1      FS815-2 TOEVOER INL. SPROEIERS C815 LAAG
E 24.2      E 24.2      LS800-2 LL NIVO V800A
E 24.3      E 24.3      LS800-3 HH NIVO V800A
E 24.4      E 24.4      LS800-5 LL NIVO V800B
E 24.5      E 24.5      LS800-7 HH NIVO TANKAUTO
E 24.6      E 24.6      LS802-2 LL NIVO V802
E 24.7      E 24.7      LS804-2 LL NIVO V804
;
E 25.0      E 25.0      LS804-3 HH NIVO V804
E 25.1      E 25.1      LS816 H NIVO C816
E 25.2      E 25.2      LS817 H NIVO C817
E 25.3      E 25.3      LS818 H NIVO C818
E 25.4      E 25.4      LS819-2 LL NIVO V819
E 25.5      E 25.5      LS820-2 LL NIVO V820
E 25.6      E 25.6      LS820-3 LL NIVO V820
E 25.7      E 25.7      MP800 CONTACTOR FEEDBACK
;
E 26.0      E 26.0      xxxxxxxxxxxxxxxxxxxx
E 26.1      E 26.1      xxxxxxxxxxxxxxxxxxxx
E 26.2      E 26.2      xxxxxxxxxxxxxxxxxxxx
E 26.3      E 26.3      MP802A CONTACTOR FEEDBACK
E 26.4      E 26.4      xxxxxxxxxxxxxxxxxxxx
E 26.5      E 26.5      xxxxxxxxxxxxxxxxxxxx
E 26.6      E 26.6      MA161 CONTACTOR FEEDBACK
E 26.7      E 26.7      MM802 CONTACTOR FEEDBACK
;
E 27.0      VIBRO151.2-H MK151.2 VIBRO HOOG
E 27.1      VIBRO151.2-H MK151.2 VIBRO HOOGHOOG
E 27.2      E 27.2      xxxxxxxxxxxxxxxxxxxx
E 27.3      E 27.3      xxxxxxxxxxxxxxxxxxxx
E 27.4      E 27.4      xxxxxxxxxxxxxxxxxxxx
E 27.5      E 27.5      xxxxxxxxxxxxxxxxxxxx
E 27.6      E 27.6      MA168.2 CONTACTOR FEEDBACK
E 27.7      E 27.7      MM804 CONTACTOR FEEDBACK

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;
E 28.0      E 28.0      MP805 CONTACTOR FEEDBACK
E 28.1      MP815.1-RUN  MP815.1 CONTACTOR FEEDBACK
E 28.2      E 28.2      MK820B CONTACTOR FEEDBACK
E 28.3      E 28.3      xxxxxxxxxxxxxxxxxxxxxx
E 28.4      MK151.X-TRACE MK151.X TRACING FEEDBACK
E 28.5      E 28.5      xxxxxxxxxxxxxxxxxxxxxx
E 28.6      E 28.6      xxxxxxxxxxxxxxxxxxxxxx
E 28.7      E 28.7      MP816A CONTACTOR FEEDBACK
;
E 29.0      E 29.0      TS155-1 BUITENLUCHT TEMP < 1 GRD.C
E 29.1      E 29.1      TS155-2 BUITENLUCHT TEMP < -5 GRD.C
E 29.2      E 29.2      LS161 L NIVO MOBREY HOOFDDRUM
E 29.3      E 29.3      LS162 L NIVO MOBREY NEVENDRUM
E 29.4      E 29.4      MS816A-1 START KNOP MP816A
E 29.5      E 29.5      MS816B-1 STOP KNOP MP816A
E 29.6      E 29.6      FS156 KOELWATER CONDENSAAT P151
E 29.7      E 29.7      FS165 KOELWATER SCHROEF A158
;
E 30.0      E 30.0      MP816B CONTACTOR FEEDBACK
E 30.1      E 30.1      MS816A-2 START KNOP MP816B
E 30.2      E 30.2      xxxxxxxxxxxxxxxxxxxxxx
E 30.3      E 30.3      xxxxxxxxxxxxxxxxxxxxxx
E 30.4      E 30.4      LS830-1 H NIVO V830
E 30.5      E 30.5      xxxxxxxxxxxxxxxxxxxxxx
E 30.6      E 30.6      xxxxxxxxxxxxxxxxxxxxxx
E 30.7      E 30.7      xxxxxxxxxxxxxxxxxxxxxx
;
E 31.0      E 31.0      MF830 MOTOR LOOPT (VACUUMFILTER)
E 31.1      E 31.1      XA.. NOODSTOP BEDIEND (VACUUMFILTER)
E 31.2      E 31.2      HC1001 WERKSCHAKELAAR IN
E 31.3      E 31.3      xxxxxxxxxxxxxxxxxxxxxx
E 31.4      E 31.4      xxxxxxxxxxxxxxxxxxxxxx
E 31.5      E 31.5      MP1001 GENERAL ALARM
E 31.6      E 31.6      xxxxxxxxxxxxxxxxxxxxxx
E 31.7      E 31.7      XPV1008 KLEP OPEN
;
E 32.0      E 32.0      XPV1008 KLEP DICHT
E 32.1      E 32.1      xxxxxxxxxxxxxxxxxxxxxx
E 32.2      E 32.2      LAGE FLOW VERFLANS
E 32.3      E 32.3      LA161 STORING MOBREY
E 32.4      E 32.4      LA162 STORING MOBREY
E 32.5      E 32.5      ES.. SLEUTEL OVERBR.INTERLOCKING BEDIEND
E 32.6      PS167.1-L   PS167-1 WERKLUCHTDruk > 3,5 BAR
E 32.7      PS167.2-L   PS167-2 WERKLUCHTDruk > 1 BAR
;
E 33.0      E 33.0      dPS169 H DRUK DOEKENFILTER F150
E 33.1      E 33.1      xxxxxxxxxxxxxxxxxxxxxx
E 33.2      E 33.2      xxxxxxxxxxxxxxxxxxxxxx
E 33.3      E 33.3      xxxxxxxxxxxxxxxxxxxxxx
E 33.4      E 33.4      xxxxxxxxxxxxxxxxxxxxxx
E 33.5      E 33.5      xxxxxxxxxxxxxxxxxxxxxx

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E 33.6      E 33.6      XZS151-1 XPV151 OPEN
E 33.7      E 33.7      XZS151-2 XPV151 DICHT
;
E 34.0      E 34.0      xxxxxxxxxxxxxxxxxxxx
E 34.1      E 34.1      xxxxxxxxxxxxxxxxxxxx
E 34.2      E 34.2      xxxxxxxxxxxxxxxxxxxx
E 34.3      E 34.3      FS155 KOELWATER CIRC. P150
E 34.4      E 34.4      FS154 FLOW MINIMAAL
E 34.5      E 34.5      xxxxxxxxxxxxxxxxxxxx
E 34.6      E 34.6      xxxxxxxxxxxxxxxxxxxx
E 34.7      E 34.7      MK172 CONTACTOR FEEDBACK
;
E 35.0      E 35.0      xxxxxxxxxxxxxxxxxxxx
E 35.1      E 35.1      xxxxxxxxxxxxxxxxxxxx
E 35.2      E 35.2      xxxxxxxxxxxxxxxxxxxx
E 35.3      E 35.3      xxxxxxxxxxxxxxxxxxxx
E 35.4      E 35.4      xxxxxxxxxxxxxxxxxxxx
E 35.5      E 35.5      xxxxxxxxxxxxxxxxxxxx
E 35.6      E 35.6      xxxxxxxxxxxxxxxxxxxx
E 35.7      E 35.7      xxxxxxxxxxxxxxxxxxxx
;
E 36.0      E 36.0      xxxxxxxxxxxxxxxxxxxx
E 36.1      E 36.1      xxxxxxxxxxxxxxxxxxxx
E 36.2      E 36.2      xxxxxxxxxxxxxxxxxxxx
E 36.3      E 36.3      MK175 CONTACTOR FEEDBACK
E 36.4      E 36.4      MS816B-2 STOP KNOP MP816B
E 36.5      E 36.5      MP816C CONTACTOR FEEDBACK
E 36.6      E 36.6      MS816A-3 START KNOP MP816C
E 36.7      E 36.7      MS816B-3 STOP KNOP MP816C
;
E 37.0      MK818.1-RUN  MK818.1 CONTACTOR FEEDBACK
E 37.1      E 37.1      MP819 CONTACTOR FEEDBACK
E 37.2      E 37.2      MK819 CONTACTOR FEEDBACK
E 37.3      E 37.3      MK820A CONTACTOR FEEDBACK
E 37.4      E 37.4      PS802 H DRUK HYDROXIDE P802A/S
E 37.5      E 37.5      PS802 L DRUK HYDROXIDE P802A/S
E 37.6      E 37.6      MP910A CONTACTOR FEEDBACK
E 37.7      E 37.7      MP910S CONTACTOR FEEDBACK
;
E 38.0      E 38.0      ----SPARE-----
E 38.1      E 38.1      dPS814-1 DEMISTER SCRUBBER C815 HOOG
E 38.2      E 38.2      dPS814-2 WARMTEWISSELAAR E815 HOOG
E 38.3      E 38.3      ----SPARE-----
E 38.4      E 38.4      PS819-1 POST-OX. VENTILATOR K819 HOOG
E 38.5      E 38.5      FS811-1 ROOKGAS TOEVOER C815 LAAG
E 38.6      E 38.6      ----SPARE-----
E 38.7      E 38.7      TS811-1 L TEMP ROOKGAS TOEVOER
;
E 39.0      E 39.0      ----SPARE-----
E 39.1      E 39.1      ----SPARE-----
E 39.2      E 39.2      ----SPARE-----
E 39.3      E 39.3      TS814-1 HH TEMP ROOKGAS UITL. KOELER

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E 39.4	E 39.4	----SPARE-----
E 39.5	E 39.5	XS812 VIBRATIE MK-818 HOOG
E 39.6	E 39.6	----SPARE-----
E 39.7	E 39.7	----SPARE-----
;		
E 40.0	E 40.0	----SPARE-----
E 40.1	E 40.1	FS908 KOELWATER NAAR A173
E 40.2	E 40.2	FS911 KOELWATER NAAR Z815
E 40.3	E 40.3	FS912 KOELWATER NAAR E830
E 40.4	E 40.4	FS913 KOELWATER BESTAAND CIRCUIT
E 40.5	E 40.5	----SPARE-----
E 40.6	E 40.6	----SPARE-----
E 40.7	E 40.7	----SPARE-----
;		
E 41.0	E 41.0	----SPARE-----
E 41.1	E 41.1	----SPARE-----
E 41.2	E 41.2	----SPARE-----
E 41.3	E 41.3	FS951 SEAL WATER LAAG
E 41.4	E 41.4	----SPARE-----
E 41.5	E 41.5	----SPARE-----
E 41.6	E 41.6	----SPARE-----
E 41.7	E 41.7	----SPARE-----
;		
E 42.0	E 42.0	----SPARE-----
E 42.1	E 42.1	----SPARE-----
E 42.2	E 42.2	----SPARE-----
E 42.3	E 42.3	MP156-1 MOTOR LOOPT (SEAC)
E 42.4	E 42.4	----SPARE-----
E 42.5	E 42.5	----SPARE-----
E 42.6	E 42.6	----SPARE-----
E 42.7	E 42.7	----SPARE-----
;		
E 43.0	E 43.0	----SPARE-----
E 43.1	E 43.1	----SPARE-----
E 43.2	E 43.2	TS172 H TEMP ROOKGAS UITL.C150 (SEAC)
E 43.3	E 43.3	----SPARE-----
E 43.4	E 43.4	----SPARE-----
E 43.5	E 43.5	----SPARE-----
E 43.6	E 43.6	LS815-2 LL NIVO C815
E 43.7	E 43.7	----SPARE-----
;		
E 44.0	E 44.0	----SPARE-----
E 44.1	E 44.1	FS155156 KOELWATER NIET AANWEZIG
E 44.2	E 44.2	----SPARE-----
E 44.3	E 44.3	MM831 MOTOR LOOPT (VACUUMFILTER)
E 44.4	E 44.4	MM830 MOTOR LOOPT (VACUUMFILTER)
E 44.5	E 44.5	----SPARE-----
E 44.6	E 44.6	XEV182 OPEN FEEDBACK
E 44.7	E 44.7	TS169 TEMPERATUUR BED 1
;		
E 45.0	E 45.0	----SPARE-----
E 45.1	E 45.1	----SPARE-----

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E 45.2      E 45.2      ----SPARE-----
E 45.3      E 45.3      ----SPARE-----
E 45.4      E 45.4      PS820-1 PRE-OX. VENTILATOR K820A HOOG
E 45.5      E 45.5      PS820-3 PRE-OX. VENTILATOR K820B HOOG
E 45.6      E 45.6      ----SPARE-----
E 45.7      E 45.7      ----SPARE-----
;
E 46.0      E 46.0      ES.. NOODSTOP KETELBESTURING
E 46.1      E 46.1      1K17 SPANNING KETELBEST. AANWEZIG
E 46.2      E 46.2      PS151 H DRUK STOOM > 16 BAR
E 46.3      E 46.3      FS152 WATERSTROOM SECTIE 1
E 46.4      E 46.4      FS153 WATERSTROOM SECTIE 2
E 46.5      E 46.5      FS154 VOEDING CIRC. P150
E 46.6      E 46.6      4K13 AANV.KETELVOORW. VOLDAAN
E 46.7      E 46.7      LS154 HH NIVO V150 HOOFDDRUM
;
E 47.0      E 47.0      LS155 HH NIVO V150 NEVENDRUM
E 47.1      E 47.1      TS169 HH TEMP BED 1
E 47.2      E 47.2      TS170 HH TEMP BED 2
E 47.3      E 47.3      dPS160 BEDHOOGTE < MIN.
E 47.4      E 47.4      XS.. STORING WATCHDOG PLC
E 47.5      E 47.5      PS163 H DRUK VUURHAARD
E 47.6      E 47.6      PS180 L DRUK STUURLUCHT
E 47.7      E 47.7      PS174 L DRUK AANST.LUCHT
;
E 48.0      E 48.0      PS171-1 L DRUK GAS
E 48.1      E 48.1      PS171-2 H DRUK GAS
E 48.2      E 48.2      XZS168/169 HOOFDGASVENTIEL NIET GESLOTEN
E 48.3      E 48.3      FS198199 VERBRANDINGSLUCHTFLOW < MIN.
E 48.4      E 48.4      TZS183 GASKLEP BED NIET IN STAND POS.
E 48.5      E 48.5      TZS184 GASKLEP BED NIET IN STAND POS.
E 48.6      E 48.6      FS198199 SPOELLUCHTFLOW < 90%
E 48.7      E 48.7      TS158-1/159-1 SPOELEN OVERBR. T=600 GRD
;
E 49.0      E 49.0      9K16/K18 VOORW. CIRCUIT GESLOTEN
E 49.1      E 49.1      10K3 VLAM STORING
E 49.2      E 49.2      10K10 REGELVRIJGAVE TIC AUTO
E 49.3      E 49.3      10K12 REGELVRIJGAVE
E 49.4      E 49.4      10K14 TEST VERBR.LUCHT DRUKSCHAKELAAR
E 49.5      E 49.5      11K4 PROGRAMMA STARTBEREID
E 49.6      E 49.6      dPS158 VERBR.LUCHT < MIN
E 49.7      E 49.7      XS173 GASLEK HOOFDVENTIEL
;
E 50.0      E 50.0      12K3/K7 REGELING NAAR SPOELSTAND (90% FL
E 50.1      E 50.1      12K3 REGELING NAAR SPOELSTAND
E 50.2      E 50.2      12K7 SPOELTIJD LOOPT (5 MIN.)
E 50.3      E 50.3      12K13/K18 REGELING NAAR START STAND
E 50.4      E 50.4      12K3/K18 PROGRAMMA LOOPT
E 50.5      E 50.5      13K3/K5 AANST.BRANDERS CONTINU
E 50.6      E 50.6      13K8 ONTSTEKING IN
E 50.7      E 50.7      XEV168 HOOFDVENTIEL VA1 OPEN
;

```

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E 51.0      E 51.0      XEV169/170/171 HOOFDVENTIELEN VA2,VA3-1,
E 51.1      E 51.1      BR152 AANST.BRANDER 2 IN STORING
E 51.2      E 51.2      BR153 AANST.BRANDER 1 IN STORING
E 51.3      E 51.3      15K7 HOOFDVLAM AANWEZIG
E 51.4      E 51.4      XEV164/165/166 AANST.VENTIELEN OPEN
E 51.5      E 51.5      XEV170 HOOFDBRANDERS BED 2 UIT
E 51.6      E 51.6      XEV171 HOOFDBRANDERS BED 1 UIT
E 51.7      E 51.7      xxxxxxxxxxxxxxxxxxxx
;
;
;
;UITGANGEN 5 KAARTEN A 32 INGANGEN      SPARE = 30 %
;
A 0.0      A 0.0      xxxxxxxxxxxxxxxxxxxx
A 0.1      A 0.1      xxxxxxxxxxxxxxxxxxxx
A 0.2      A 0.2      XEV818 OPEN
A 0.3      A 0.3      ----SPARE-----
A 0.4      A 0.4      ----SPARE-----
A 0.5      A 0.5      ----SPARE-----
A 0.6      A 0.6      ----SPARE-----
A 0.7      A 0.7      ----SPARE-----
;
A 1.0      A 1.0      MK129 START
A 1.1      A 1.1      MF129 START
A 1.2      A 1.2      ----SPARE-----
A 1.3      A 1.3      ----SPARE-----
A 1.4      A 1.4      ----SPARE-----
A 1.5      A 1.5      ----SPARE-----
A 1.6      A 1.6      MA128 START
A 1.7      A 1.7      MA131 START
;
A 2.0      A 2.0      MK134 START
A 2.1      A 2.1      MF134 START
A 2.2      A 2.2      ----SPARE-----
A 2.3      A 2.3      ----SPARE-----
A 2.4      A 2.4      ----SPARE-----
A 2.5      A 2.5      ----SPARE-----
A 2.6      A 2.6      ----SPARE-----
A 2.7      A 2.7      ----SPARE-----
;
A 3.0      A 3.0      ----SPARE-----
A 3.1      A 3.1      MA136 START
A 3.2      A 3.2      MK128 START
A 3.3      A 3.3      MK131 START
A 3.4      A 3.4      ----SPARE-----
A 3.5      A 3.5      ----SPARE-----
A 3.6      A 3.6      ----SPARE-----
A 3.7      A 3.7      ----SPARE-----
;
A 4.0      A 4.0      MP800 START
A 4.1      A 4.1      START HOOFDBRANDERS
A 4.2      A 4.2      MP802A START

```

```

A 4.3      A 4.3      MA161 START
A 4.4      A 4.4      XEV104 OPEN
A 4.5      A 4.5      XEV108 OPEN
A 4.6      A 4.6      ----SPARE-----
A 4.7      A 4.7      ----SPARE-----
;
A 5.0      A 5.0      VERWARMING KOP DOEKENFILTER AAN
A 5.1      A 5.1      MP950 START
A 5.2      A 5.2      ----SPARE-----
A 5.3      A 5.3      MK820B START
A 5.4      A 5.4      MP910A START
A 5.5      A 5.5      MP910S START
A 5.6      A 5.6      MM802 START
A 5.7      A 5.7      MA157 START
;
A 6.0      A 6.0      MA150 START
A 6.1      A 6.1      MA151 START
A 6.2      A 6.2      ----SPARE-----
A 6.3      A 6.3      ----SPARE-----
A 6.4      A 6.4      ----SPARE-----
A 6.5      A 6.5      MA156 START
A 6.6      A 6.6      MA158 START
A 6.7      A 6.7      MA159 START
;
A 7.0      A 7.0      MA160-1 START
A 7.1      A 7.1      ----SPARE-----
A 7.2      A 7.2      MA179 START
A 7.3      A 7.3      MA160-2 START
A 7.4      A 7.4      ----SPARE-----
A 7.5      A 7.5      MA153 START
A 7.6      A 7.6      MK150 START
A 7.7      MK151.1-START MK151.1 START
;
A 8.0      A 8.0      MK152 START
A 8.1      A 8.1      MA173 START
A 8.2      A 8.2      MA152.1 START
A 8.3      A 8.3      MA178 START
A 8.4      A 8.4      ----SPARE-----
A 8.5      MK815-START  MK158 START
A 8.6      MK151.2-START MK151.2 START
A 8.7      A 8.7      MP151 START
;
A 9.0      A 9.0      MP152 START
A 9.1      A 9.1      ----SPARE-----
A 9.2      A 9.2      ----SPARE-----
A 9.3      A 9.3      MA156.1 START
A 9.4      A 9.4      DOEKENFILTER KLEP 1
A 9.5      A 9.5      DOEKENFILTER KLEP 2
A 9.6      A 9.6      DOEKENFILTER KLEP 3
A 9.7      A 9.7      DOEKENFILTER KLEP 4
;
A 10.0     A 10.0     ----SPARE-----

```

```

A 10.1      A 10.1      ----SPARE-----
A 10.2      A 10.2      ----SPARE-----
A 10.3      A 10.3      MA168.2 START
A 10.4      A 10.4      MM802 START
A 10.5      A 10.5      MP805 START
A 10.6      MP815-START MP815 START
A 10.7      A 10.7      ----SPARE-----
;
A 11.0      A 11.0      MP816A START
A 11.1      A 11.1      MP816B START
A 11.2      A 11.2      ----SPARE-----
A 11.3      A 11.3      ----SPARE-----
A 11.4      A 11.4      XEV182 OPEN
A 11.5      A 11.5      MP816C START
A 11.6      A 11.6      ----SPARE-----
A 11.7      A 11.7      ----SPARE-----
;
A 12.0      A 12.0      CLAXON/ZWAAILICHT
A 12.1      A 12.1      ----SPARE-----
A 12.2      A 12.2      ----SPARE-----
A 12.3      A 12.3      ----SPARE-----
A 12.4      A 12.4      ----SPARE-----
A 12.5      A 12.5      MP1001 START
A 12.6      A 12.6      XPV1008 OPEN
A 12.7      A 12.7      VRIJGAVE VERWARMING VASTVERF
;
A 13.0      A 13.0      ----SPARE-----
A 13.1      A 13.1      WATCHDOG PLC STORING
A 13.2      A 13.2      xxxxxxxxxxxxxxxxxxxx
A 13.3      A 13.3      xxxxxxxxxxxxxxxxxxxx
A 13.4      A 13.4      DOEKENFILTER KLEP 5
A 13.5      A 13.5      DOEKENFILTER KLEP 6
A 13.6      A 13.6      MK172 START-PULS
A 13.7      A 13.7      MK172 STOP-PULS
;
A 14.0      A 14.0      DOEKENFILTER KLEP 11
A 14.1      A 14.1      MK175 START-PULS
A 14.2      A 14.2      MK175 STOP-PULS
A 14.3      A 14.3      MK818 START
A 14.4      A 14.4      MP819 START
A 14.5      A 14.5      MK819 START
A 14.6      A 14.6      MK820A START
A 14.7      A 14.7      XEV800 OPEN
;
A 15.0      A 15.0      XEV815 OPEN
A 15.1      A 15.1      MB154 START
A 15.2      A 15.2      MB155 START
A 15.3      A 15.3      XS150 START WATER CONTROL (SEAC)
A 15.4      A 15.4      XS151 STOP WATER CONTROL (SEAC)
A 15.5      A 15.5      XS115 START CONTROL SYSTEEM (SEAC)
A 15.6      A 15.6      ----SPARE----- (MA182 START ?)
A 15.7      A 15.7      VRIJGAVE MGS04-FILTER

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```

;
A 16.0      A 16.0      DOEKENFILTER KLEP 12
A 16.1      A 16.1      DOEKENFILTER KLEP 13
A 16.2      A 16.2      DOEKENFILTER KLEP 14
A 16.3      A 16.3      DOEKENFILTER KLEP 15
A 16.4      A 16.4      DOEKENFILTER KLEP 16
A 16.5      A 16.5      DOEKENFILTER KLEP 17
A 16.6      A 16.6      DOEKENFILTER KLEP 18
A 16.7      A 16.7      RESET KETELTRIP (BRANDER)
;
A 17.0      A 17.0      MA162 START
A 17.1      A 17.1      DOEKENFILTER KLEP 7
A 17.2      A 17.2      DOEKENFILTER KLEP 8
A 17.3      A 17.3      DOEKENFILTER KLEP 9
A 17.4      A 17.4      DOEKENFILTER KLEP 10
A 17.5      A 17.5      AANV.KETELVOORW. VOLDAAN (BRANDER)
A 17.6      A 17.6      KOELWATER AANWEZIG (BRANDER)
A 17.7      A 17.7      TEMP. BED 1 > 1000 GRD.C (BRANDER)
;
A 18.0      A 18.0      TEMP. BED 2 > 1000 GRD.C (BRANDER)
A 18.1      A 18.1      BEDHOOGTE MINIMAAL (BRANDER)
A 18.2      A 18.2      OVERBR.SPOELEN T=550-600 GRD.C (BRANDER)
A 18.3      A 18.3      RESET VLAMSTORING (BRANDER)
A 18.4      A 18.4      START/STOP BRANDERBEST. (BRANDER)
A 18.5      A 18.5      AANST. BRANDERS CONTINU (BRANDER)
A 18.6      A 18.6      AANST. BRANDERS STOP (BRANDER)
A 18.7      A 18.7      HOOFDBRANDERS BED 1 AAN (BRANDER)
;
A 19.0      A 19.0      HOOFDBRANDERS BED 1 UIT (BRANDER)
A 19.1      A 19.1      HOOFDBRANDERS BED 2 AAN (BRANDER)
A 19.2      A 19.2      HOOFDBRANDERS BED 2 UIT (BRANDER)
A 19.3      A 19.3      ----SPARE-----
A 19.4      A 19.4      XEV150 DICHT
A 19.5      A 19.5      XEV150 OPEN
A 19.6      A 19.6      XEV151 DICHT
A 19.7      A 19.7      XEV151 OPEN
;
;
;
;
;
M 0.0      ON          LOGISCHE "1"
M 0.1      OFF         LOGISCHE "0"
M 0.2      M 0.2
M 0.3      M 0.3
M 0.4      M 0.4
M 0.5      M 0.5
M 0.6      M 0.6
M 0.7      M 0.7
M 1.0      M 1.0
M 1.1      M 1.1
M 1.2      M 1.2

```

M 1.3	M 1.3
M 1.4	M 1.4
M 1.5	M 1.5
M 1.6	M 1.6
M 1.7	M 1.7
M 2.0	M 2.0
M 2.1	M 2.1
M 2.2	M 2.2
M 2.3	M 2.3
M 2.4	M 2.4
M 2.5	M 2.5
M 2.6	M 2.6
M 2.7	M 2.7
M 3.0	M 3.0
M 3.1	M 3.1
M 3.2	M 3.2
M 3.3	M 3.3
M 3.4	M 3.4
M 3.5	M 3.5
M 3.6	M 3.6
M 3.7	M 3.7
M 4.0	M 4.0
M 4.1	M 4.1
M 4.2	M 4.2
M 4.3	M 4.3
M 4.4	M 4.4
M 4.5	M 4.5
M 4.6	M 4.6
M 4.7	M 4.7
M 5.0	M 5.0
M 5.1	M 5.1
M 5.2	M 5.2
M 5.3	M 5.3
M 5.4	M 5.4
M 5.5	M 5.5
M 5.6	M 5.6
M 5.7	M 5.7
M 6.0	M 6.0
M 6.1	M 6.1
M 6.2	M 6.2
M 6.3	M 6.3
M 6.4	M 6.4
M 6.5	M 6.5
M 6.6	M 6.6
M 6.7	M 6.7
M 7.0	M 7.0
M 7.1	M 7.1
M 7.2	M 7.2
M 7.3	M 7.3
M 7.4	M 7.4
M 7.5	M 7.5
M 7.6	M 7.6

```

M 7.7          M 7.7
;
;
;
;
;
;PROGRAMMA BOUWSTENEN:
;
;PB10 - PB88   : MOTOREN MET BIJBEHOREND MERKERBYTE (MB10 = MERKERBYTE
;               BIJ PB10)
;
;PB114 - PB123 : KLEPPEN MET BIJBEHOREND MERKERBYTE
;
PB 2           PB2           ALARM ACKNOWLEDGE UIT SCADA
PB 4           PB4           xxxxxxxxxxxxxxxxxxxxxx
PB 5           PB5           TEST PROGRAMMA BOUWSTEEN
PB 9           PB9           AUTO START/STOP MOTOREN/KLEPPEN
PB 10          PB10          MM802   - ROERWERK V802
PB 11          PB11          MM804   - ROERWERK V804
PB 12          PB12          MP800   - SULFAAT VERLAAD POMP
PB 16          PB16          MP802A  - HYDROXIDE DISTRIBUTIE POMP
PB 17          PB17          HC1001
PB 18          PB18          MK129   - AFZUIG VENTILATOR B129/B130
PB 19          PB19          MF129   - FILTER BOVEN B129/B130
PB 24          PB24          MA128   - SLUIS ONDER B128
PB 25          PB25          MA131
PB 26          PB26          MK134   - AFZUIG VENTILATOR B134/B135
PB 27          PB27          MF134   - FILTER BOVEN B134/B135
PB 35          PB35          MA136   - SLUIS ONDER B136
PB 36          PB36          MK128   - BLOWER K158
PB 37          PB37          MK131   - BLOWER K131
PB 42          PB42          MA150   - SCHROEF ONDER B150
PB 43          PB43          MA151   - SCHROEF ONDER B151
PB 44          PB44          MA161   - SCHROEF ONDER F-150
PB 45          PB45          MA162   - SCHROEF ONDER B162
PB 46          PB46          MP804.1 - EIND OXIDATIE FEED POMP
PB 47          PB47          MA182   - SCHROEF ONDER B155
PB 48          PB48          MA152   - TRANSPORT SCHROEF
PB 49          PB49          MA159   - SLUIS ONDER S150
PB 50          PB50          MA160.1 - SLUIS ONDER F150
PB 52          PB52          MA179   - SLUIS ONDER C150
PB 53          PB53          MA160.2 - SLUIS ONDER F150
PB 54          PB54          MP805   - EVAPORATOR FEED POMP
PB 55          PB55          MA153   - SCHREDDER ONDER B153
PB 56          PB56          MK150   - VERBRANDINGSLUCHT VENTILATOR
PB 57          PB57          MK151   - ROOKGAS VENTILATOR
PB 58          PB58          MK152   - LUCHTCOMPRESSOR AANSTEEKBRANDE
PB 59          PB59          MA173   - SCHROEF NAAR S159
PB 60          PB60          MA152.1 - SCHROEF ONDER MA-152
PB 61          PB61          MA178   - SCHROEF NAAR A173
PB 62          PB62          MP815   - QUENCH CIRCULATIE POMP
PB 63          PB63          MK158   - CONDENSOR VENTILATOR E151

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PB 64	PB64	MP150	- CIRCULATIE POMP
PB 65	PB65	MP151	- CONDENSAAT TRANSPORT POMP
PB 66	PB66	MP152	- SUPPLETIE POMP
PB 68	PB68	MA156	- SCHROEF BOVEN BEDVOEDING
PB 69	PB69	MP1001	- VASTVERF TOEVOER POMP
PB 70	PB70	MP816A	- CIRCULATIE POMP
PB 71	PB71	MP816B	- CIRCULATIE POMP
PB 72	PB72	MK172	- COMPRESSOR K172
PB 73	PB73	MK175	- COMPRESSOR K175
PB 75	PB75	MP950	- SEALWATER POMP
PB 77	PB77	MK820.2	- PRE OXIDATIE BLOWER
PB 78	PB78	MP910A	- KOELWATER CIRCULATIE POMP
PB 79	PB79	MP910S	- KOELWATER CIRCULATIE POMP
PB 81	PB81	MA157	- BEDVOEDING SLUIS
PB 82	PB82	MP816C	- CIRCULATIE POMP
PB 83	PB83	MK818	- ROOKGAS VENTILATOR
PB 84	PB84	MP819	- POST OXIDATIE TANK FEED POMP
PB 85	PB85	MP819.3	- POST OXIDATIE BLOWER
PB 86	PB86	MK820.1	- PRE OXIDATIE BLOWER
PB 87	PB87	MB154	- TRILMOTOR BUNKER B154
PB 88	PB88	MB155	- TRILMOTOR BUNKER B155
PB 89	PB89	MA168.2	- VOEDINGSSCHROEF NATTE KAT
			;
			;
			;
PB 114	PB114	XPV104	- DRIEWEG KLEP NAAR B129/B130
PB 115	PB115	XPV108	- DRIEWEG KLEP NAAR B134/B135
PB 116	PB116	XEV815	- DEMI-WATER NAAR INLAAT C-815 QU
PB 117	PB117	XPV1008-	- NATTE KAT TOEVOER KLEP
PB 118	PB118	XEV150	- JALOUZIE KLEP
PB 119	PB119	XEV151	- JALOUZIE KLEP
PB 120	PB120	PV1008	- VASTVERF TOEVOER KLEP
PB 121	PB121	XPV818	- POT. WATER NAAR S-818/S-822
PB 122	PB122	XPV800	- PRODUKT VAN V-800 NAAR TANKAUTO
PB 123	PB123	XPV182	- BY-PASS CIRCULATIE POMP P150
			;
			;
			;
PB 150	PB150	ANA.IN. EN SCHALEN PW128	- PW254
PB 151	PB151	ANA.IN. EN SCHALEN QW0	- QW126
PB 152	PB152	ANA.IN. EN SCHALEN QW128	- QW254
PB 153	PB153	ANA.UIT. REGELAARS PW128	- PW254
			;
			; FUNTIE BOUWSTENEN
			;
PB 170	PB170	KETEL-	EN BRANDERVOORWAARDEN
PB 171	PB171	REGELAARS NAAR AUTO /	SCADA ALARM ACKN.
			;
			;
			;
PB 181	PB181	SEQ1	- LADEN B129/B130
PB 182	PB182	SEQ2	- LADEN B134/B135

PB 185	PB185	SEQ5 - DOEKENFILTER BESTURING
;		
;		
;		
FB 4	FB004	STATISCHE
FB 5	FB005	KETELTRIP
;		
;		
;		
FB 10	FB010	GWS-SEN
FB 11	FB011	GWS-SEN
FB 12	FB012	GWS-SEN
;		
;		
;		
FB 29	FB029	BIN-COM
;		
;		
;		
FB 83	FB083	MK 818 STOP
;		
;		
;		
FB 90	FB090	RESET
FB 91	FB091	CP143
FB 92	FB092	SET AUTO
FB 93	FB093	CHK AUTO
FB 94	FB094	INT.-ACTUEEL
FB 99	FB099	CYCLIMET
;		
;		
;		
FB 101	FB101	MOTOR 5
;		
FB 111	FB111	KLEP 20
FB 115	FB115	NV KLEP 20
FB 119	FB119	RESET COMMANDO
;		
FB 120	FB120	SEND
FB 121	FB 121	RECEIVE
FB 122	FB 122	FETCH
FB 123	FB 123	CONTROL
FB 124	FB 124	RESET
FB 125	FB 125	SYCHRON
FB 126	FB 126	SEND-A
FB 127	FB 127	RECEIVE-A
FB 128	FB 128	BINAIRE STATISCHE
FB 129	FB 129	RESET BC
;		
FB 130	FB 130	ANALOOG IN
FB 131	FB 131	P.I.D. IN
FB 132	FB 132	P.I.D. OUT

FB 133	FB 133	BEREKEN 1
FB 134	FB 134	BEREKEN 2
;		
FB 140	FB 140	SEQUENCER 16
FB 141	FB 141	SEQUENCER 32
FB 142	FB 142	ACT. STOP
FB 143	FB 143	GENTR
FB 144	FB 144	KLEPSTAND
;		
FB 150	FB 150	ANALOOG INKG
FB 151	FB 151	BEREKEN MEET
;		
FB 200	FB 200	INIT REG
FB 201	FB 201	REGELAAR
FB 202	FB 202	SCALE OUT
FB 203	FB 203	TAKT
FB 204	FB 204	SPA FB 3

