

# Hydrauliske systemtest

## En fortælling fra den virkelige verden



**FRITZ SCHUR ENERGY**

# Agenda

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- CIM Industrial System A/S – præsentation
- Fritz Schur Energy – præsentation
- Problemstilling
  - Test af hydrauliske komponenter i produktionen
- Løsningen
  - Mekanisk / elektrisk
  - Styring og software
  - Operatørinterface

# Præsentation

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- Claus Tellefsen,  
Technology Manager, Fritz Schur Energy A/S
- Allan Henneberg, Managing Director,  
CIM Industrial Systems A/S

# CIM Industrial Systems A/S

– Green Engineering



# Connecting Technologies

Company specialized in computer and electronic engineering: Software Solutions and Test Solutions.

Strong foundation in Green engineering (Wind power, Solar power and Fuel Cell, Pump control etc.)

- Turn key solutions
- Consultancy assistance
- Software development
- Project management

More than 30 employees with university degrees

Part of the CIM Group

Established in 1998



# Vision and strategy in CIM

- Expand our activities and market share in Denmark and the Nordic regions (No 1 in Denmark).
- Expand our activities to large scale projects in Europe. “Best in Europe”
- Expand our level of certified developers each year in: Labview, .Net, Java
- Be Europe’s leading NI Alliance partner in our technology scopes.



By counting CLA  
certifications in Europe

# NI Certifications

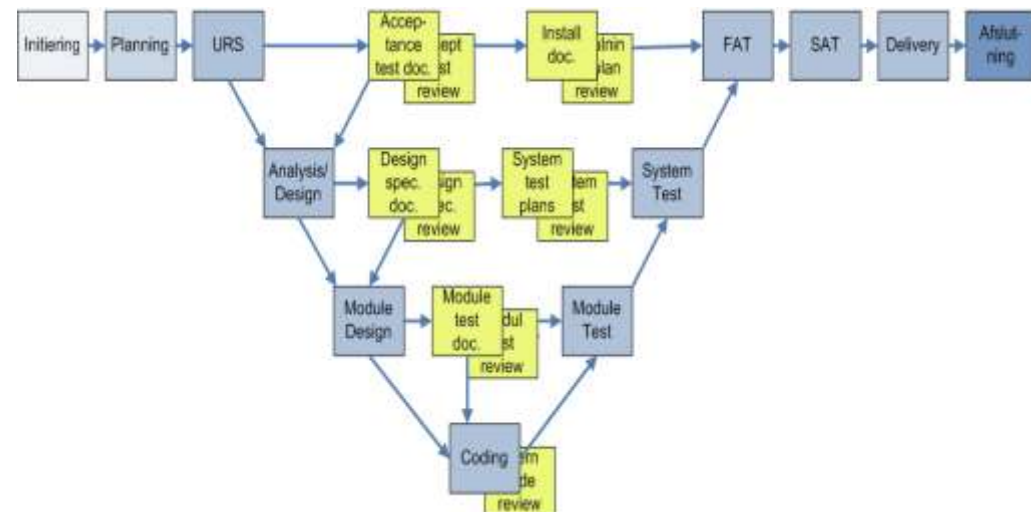
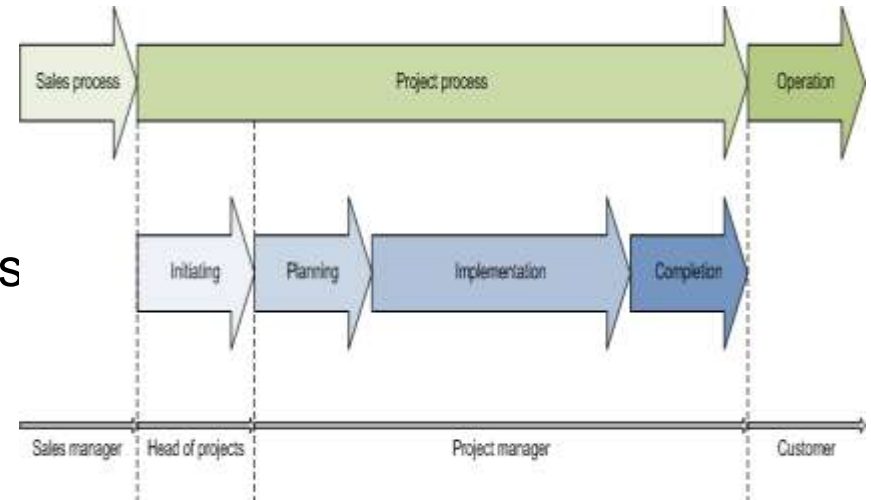


Navn	CLAD	CLD	CLA	CTD	CTA
bdm	x	x	x		
bjl	x				
hmo	-	x	x	x	
lro	x	x			
jca	x	x	x	x	
kv	x	x			
mlf	-	x			
mpe	-	x	x	x	
seo	x	x			
ssc	x	x	x	x	x
ssv	x	x	x		
uk	x	x			
vrv	-	x		x	

# Project management

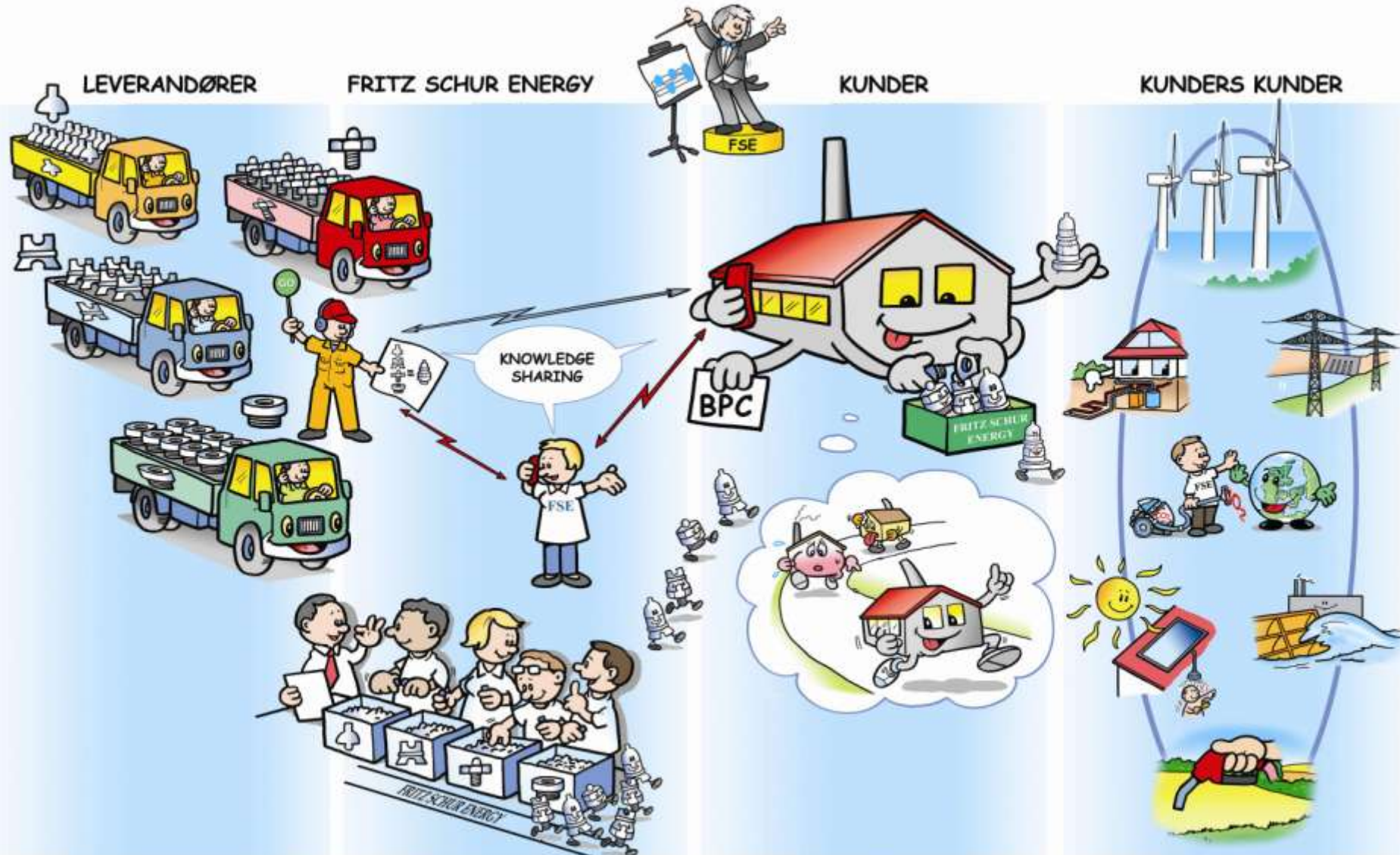
**CIM executes +100 projects each year, so project execution is a very important issue**

- Focus on project development process
  - Do it the right way
- Focus on project management
  - On time
  - On specifications
  - On price





# MISSION

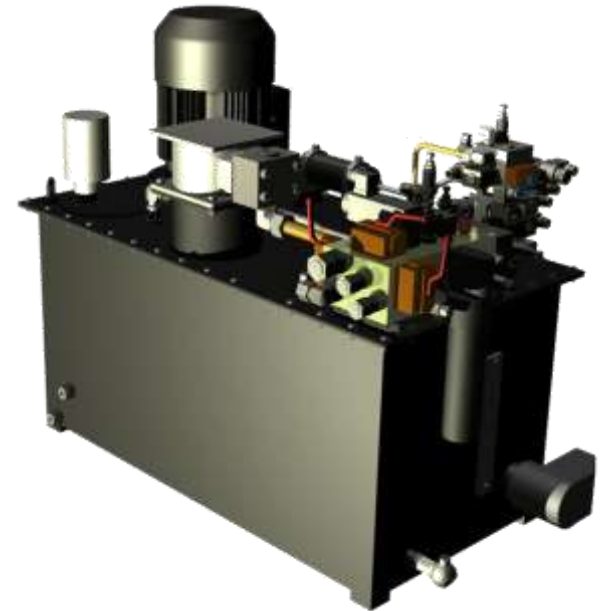


VED AT FOKUSERE PÅ INDUSTRIELLE KUNDERS KØBSKRITERIER, VIL VI GENNEM EN HENSIGTSMÆSSIG LEVERANDØRSTRATEGI, MÅLRETTET VIDENDELING, SAMT KONTINUERLIG UDVIKLING AF INTERNE KOMPETENCER, TILBYDE KUNDERNE OPTIMALE LØSNINGER, DER GIVER DEM KONKURRENCEMÆSSIGE FORDELE.

# Automatisk test

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- ② 2 funktioner
  - ② Manifoldtest
  - ② Systemtest



# Kundens købskriterier

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- ① Topkvalitet
  - ① 100% sporbarhed
  - ① Høj dokumentationsgrad
  - ① Ensartet test
- ① Leverandøren - det vil sige Fritz Schur Energy AS - påtager sig total ansvar
  - ① Hurtig afvigelsesbehandling
  - ① Stort proces- og produktkendskab
- ① Lav pris
  - ① Fleksibilitet
  - ① Lave omkostninger

# Krav

- ④ Fremtidssikker
- ④ Kommunikerer med ERP-system
- ④ Super-fleksibel
- ④ Ingen omstillingstid ved produktskifte
- ④ Minimal operatørindblanding
- ④ Fuld sporbarhed og dokumentation
- ④ Skal sende e-mail når test er gennemført
- ④ Globale komponenter
- ④ Nem at programmere
- ④ Central programmering
- ④ Central fejlsøgning
- ④ Entydig brugerflade
- ④ Flyttes og opstilles på få timer
- ④ Passe ind i en container



# Hvorfor så lige bruge Teststand som programmeringsværktøj?

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- ① Modulopbygget programmering
- ① 2 delt programmering – leverandøren (CIM) programmerer basen i labview – vi programmerer produkterne som moduler i teststand.
- ① Hurtigt at lave et program
- ① Hurtigt at redigere et program



FlexStand Operator Interface by CIM

Hjælp

04/03 2010 11:26:25 Login: HCS Serienummer: 1001789 Varenr.: 300310 Produktions Nummer: 003528

Start test Afbryd test

Hovedmenu Ole temp. Kalibrering Manuel styring System parametre Bruger styring

Test	Min.	Value	Max.	Units	Status
Signal Tower					Done
SequenceName	C:\Doc...	C:\Doc...			Passed
(End Group)					
Main (28)					
1. Opsætnings dialoger					Passed
1A. Check Tank Temperature					Passed
2. Calibration check		True			Passed
3. Initializing	100	< 175.33		Bar	Passed
4. Flushing and particle count	2	< 72	<= 15		Passed
5. Check pos 121	14.858	< 15.438	<= 20.658	Bar	Passed
6. Check pos 122					
7. Check pos 130					
8. Check position change pos 11					
9. Check pos 101					
10. Check leakage pos 102					
11. Check pos 103					
12. Check pos 120					
13. Check pos 109					
14. Check pos 119					
15. Leak test pos 1					
16. Check pos 108					
17. Leak test pos 1					
18. Check pos 107					
19. Check pos 106					
20. Check pos 105					
21. Check pos 104					
22. Check pos 103					
23. Check pos 102					
24. Check pos 101					

Operator- initialer

Serienummer, varenummer og brugers navn

Brugerflade for service og fejlfinding af test-udstyret

Kalibrer Ver bruges kun og fejlfinding af test-kalibrerings-udstyret

Operatør brugerflade

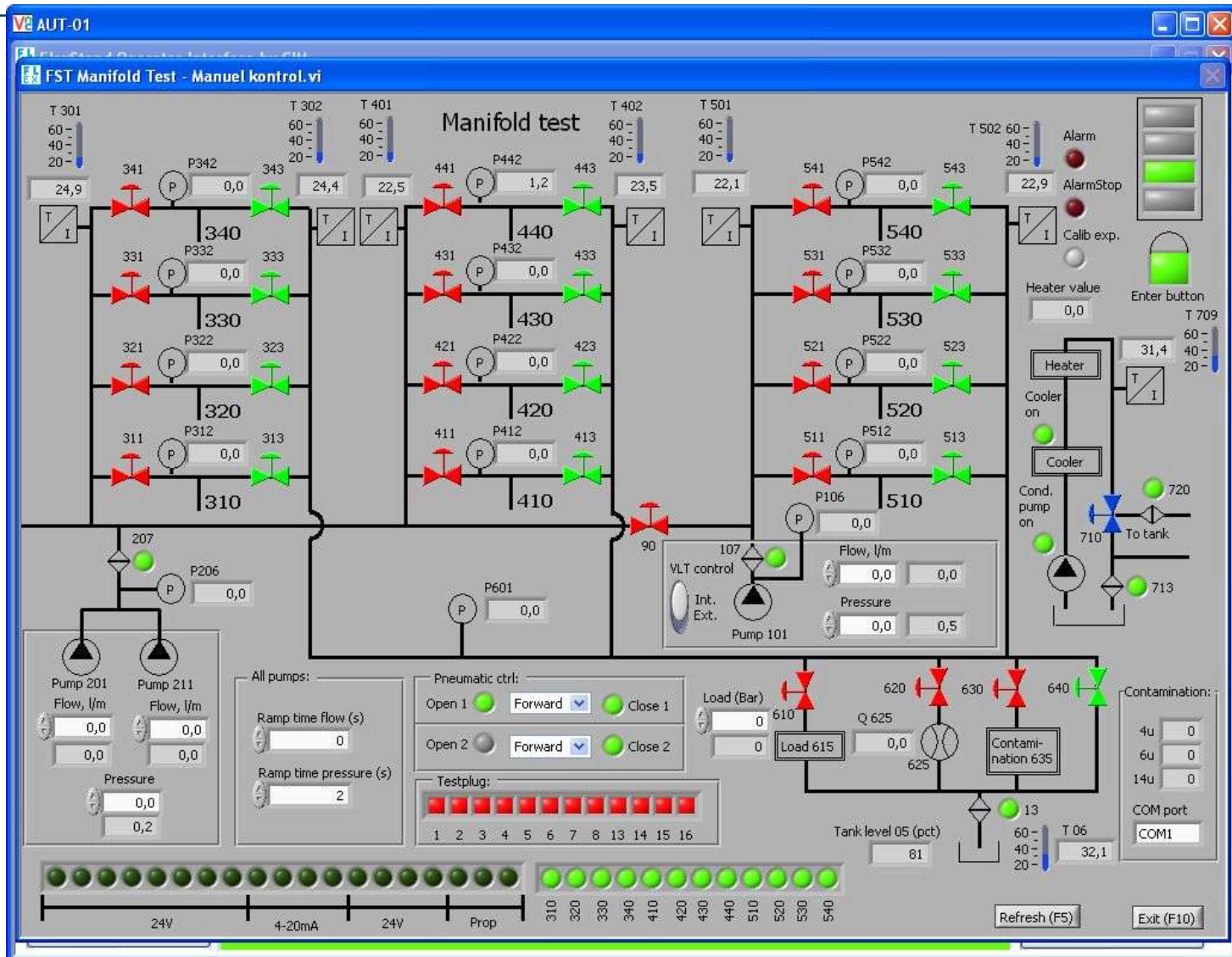
Udstyret melder selv god tid, hvornår næste kalibrering skal ske.

Styrer de rettigheder der gives til de enkelte brugere.

Hvis dette ikke overholdes kan testen ikke gennemføres

Log PC Log out

# Manuel brugerflade



24/11 2009 11:14:02

Login

HCS

Serienummer

Varenr.

Produktions Nummer

Start test

Afbrød test

Hovedmenu

Olie temp.

Kalibrering

Manuel styring

System parametre

Bruger styring

Sequence file view

Test	Min.	Value	Max.	Units	Status
<b>Setup [1]</b>					
Signal Tower					Done
<End Group>					
<b>Main [25]</b>					
1. Opsætnings dialoger					Passed
2. Calibration check		True			Passed
3. Initializing	100	< 154.44...		Bar	Passed
4. Flushing and particle count	2	<= 0	<= 15		Error
5. Check pos 121				Bar	
6. Check pos 122				Bar	
7. Check pos 130					
8. Check position change pos 116					
9. Check pos 101					
10. Check leakage pos 102					
11. Check pos 103 position change					
12. Check pos 120 position change					
13. Check pos 109 position change					
14. Check pos 119 position change					
15. Leak test pos 110, 119					
16. Check pos 108A+B					
17. Leak test pos 103, 120				Bar	
18. Leak test pos 101, 104, 109, 117, 118				Bar	
19. Check pos 107, diff at 20 bar				Bar	
20. Check pos 107, diff at 250 bar				Bar	
21. Check pos 117				Bar	
22. Check flow/pressure pos 116				Bar	
23. Check pos 102					
24. Check for external leakage					
25. Check for internal leakage 2. edition					

Luk PC

Ingen alarmer

Log ud...



24/11 2009 11:15:25

Login

HCS

Serienummer

Varenr.

Produktions Nummer

Start test

Afbryd test

Hovedmenu

Olie temp.

Kalibrering

Manuel styring

System parametre

Bruger styring

Sequence file view

## Calibration of:

P 106

## Calibration settings

## Selected calibration

test  
kalib 2009-10-19 HCS/PNS

## Name

Kalib 2009-10-19 HCS/PNS

## Description

5 l/min paa 214. Alle ventiler aabne  
paanaer til tank. Trykstyring paa 105 sat  
til 400bar.

## Expire date (Y-M-D)

2010-10-19

New calibration

New ...

Delete calibration

Delete

## Calibration function

Scaled ref	Input
18,500	4,729E-3
49,500	5,951E-3
151,400	0,010
208,900	0,012
318,800	0,017

Scaled ref.

0

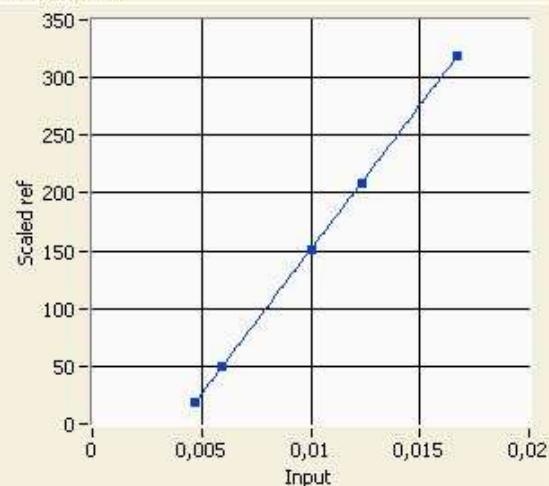
Measured input

0,00398173

Add

Delete

## Calibration graph



Calibrated value

0

Print

Save

Luk PC

Ingen alarmer

Log ud...

File Edit Konfigurer Configure Hjælp

24/11 2009 11:15:59

Login

HCS

Serienummer

Varenr.

Produktions Nummer

Start test

Afbryd test

Hovedmenu

Olie temp.

Kalibrering

Manuel styring

System parametre

Bruger styring

Sequence file view

Index	Test	Bes...	Step Indstilling	kommentar	Status
+	Set...				
-	Main				
This sequence ensures that the FST serial number dialog is used if no other sequence is loaded.					
0	Label			This sequence ensures that the FST serial number...	
	<En...				
+	Cle...				

Variabel	Værdi
- Locals ('MainSequence')	
+ ResultList	
- Parameters ('MainSequence')	
<Empty>	
- FileGlobals ('FST Load Me First...')	
<Empty>	
+ StationGlobals	

Åben Sekvensfil...

Start test

Enkelt gennemløb

Luk Afvikling

Luk PC

Ingen alarmer

Log ud...

24/11 2009 11:15:42

Login

HCS

Serienummer

Varenr.

Produktions Nummer

Start test

Afbryd test

Hovedmenu

Olie temp.

Kalibrering

Manuel styring

System parametre

Bruger styring

Sequence file view

## Alarm settings

Oil level main tank

Current settings

Warning level (pct)

50

Alarm level (pct)

30

New settings

Warning level (pct)

50

Alarm level (pct)

30

Set new alarm levels

## Temperature control

Temperature control parameters

Current settings

Setpoint Cooler

31

Setpoint Heater

28

Output Range

output high

10

output low

0

PID gains

proportional gain (Kc)

1

integral time (Ti, min)

0,01

derivative time (Td, min)

0

New settings

Setpoint Cooler

31

Setpoint Heater

28

Output Range

output high

10

output low

0

PID gains

proportional gain (Kc)

1

integral time (Ti, min)

0,01

derivative time (Td, min)

0

Set new temperature control

Luk PC

Ingen alarmer

Log ud...

# Afrunding af FSE

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- ① 1. hvad har vi lært?
- ② 2. Hvad gør vi nu?

# CIM information - [www.cim.as](http://www.cim.as)

Brochures

Business card

[info@cim.as](mailto:info@cim.as)

Download our



NEW Case Stories & Product Sheets

A screenshot of the CIM Industrial Systems A/S website. The header features the company logo and a blue curved graphic. A left sidebar contains a navigation menu with links: Welcome, Profile, Expertise, Products, Customers, and Contact. Below the menu is a Danish flag and the text 'På dansk'. The main content area has a 'Welcome' section with introductory text about the company's specialization in technical software solutions. Below this is a section titled 'CIM introduces Flexstand' and '#1 in LabVIEW and TestStand Europe's Leading', each with a small image and a 'Read more' link. The right sidebar contains the company's address: Kildegården 4, 7600 Struer, Tlf. 96 84 05 00, Jegstrupvej 95A, 8361 Hasselager, and Agern Allé 3, 2970 Hørsholm.

# Vind en iPod

**Udfyld foto med navn**  
**Afleveres ved vores bord**  
**Trækkes kl. 15:00**

