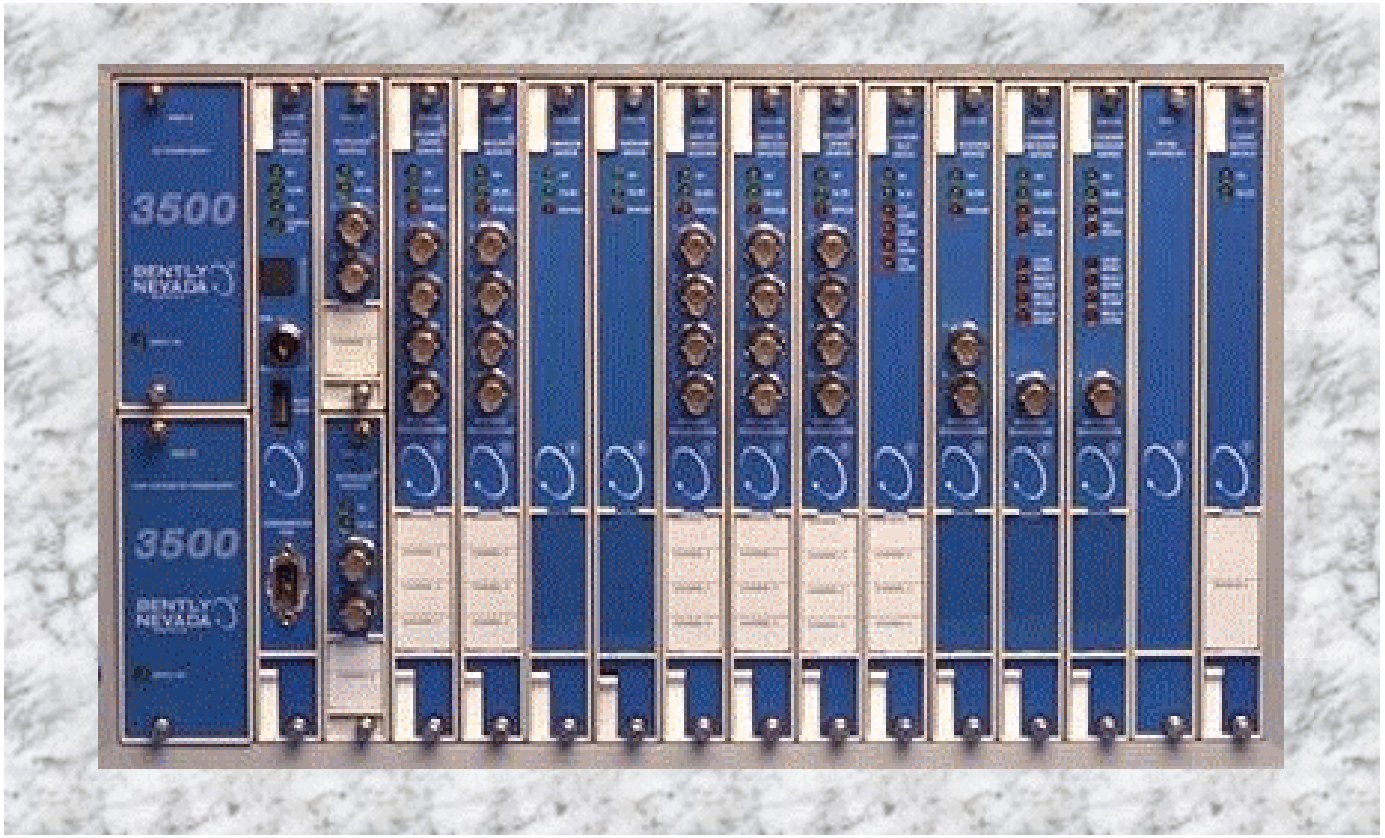
3500 监测系统



Rev K

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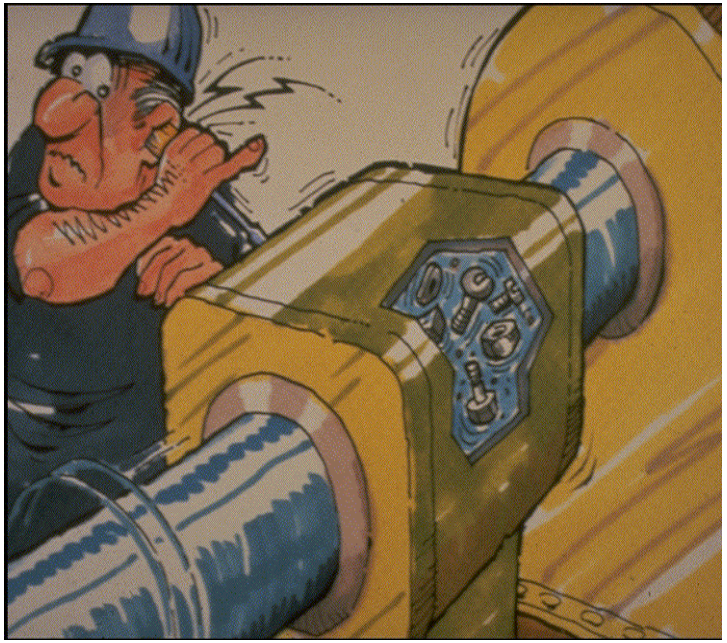
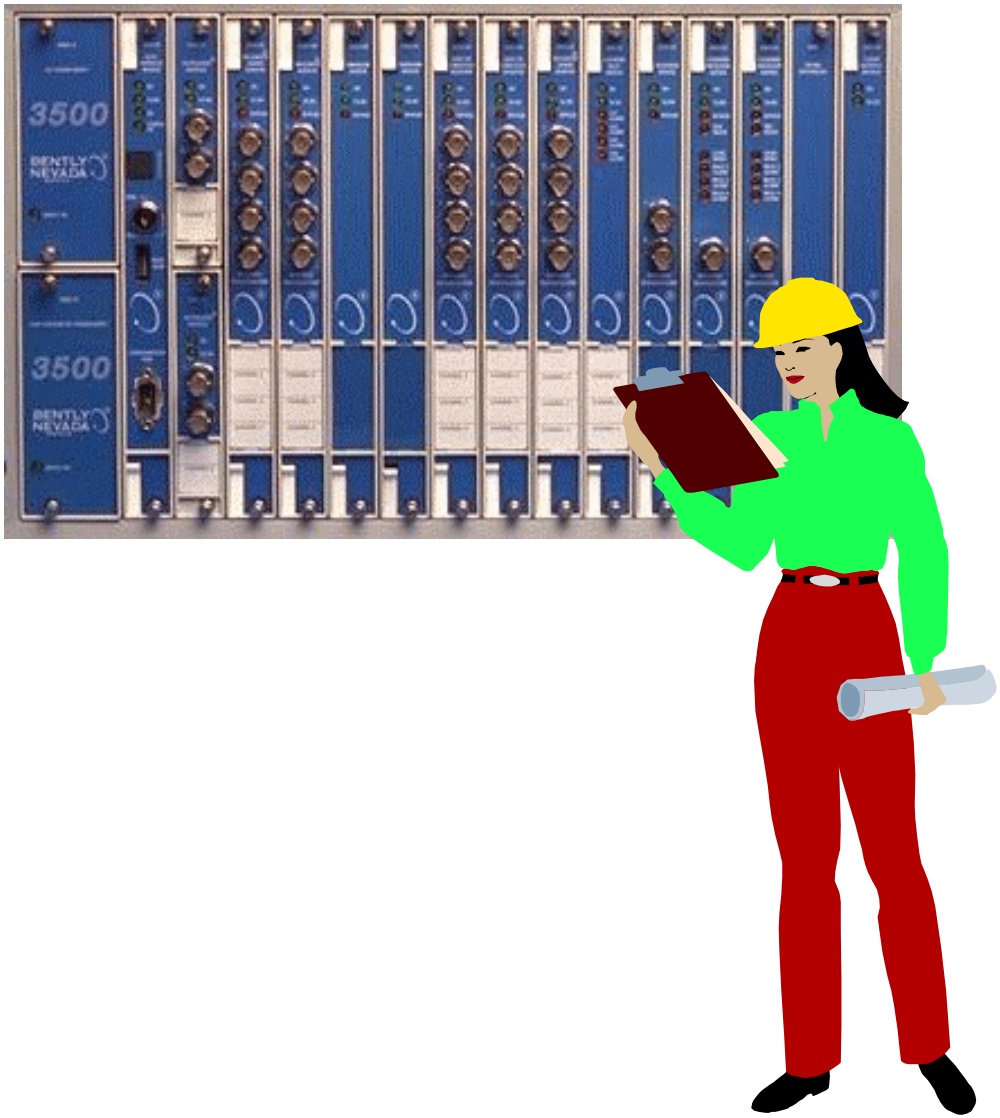
3500 监测系统

3500 是一个全方位的监测系统:

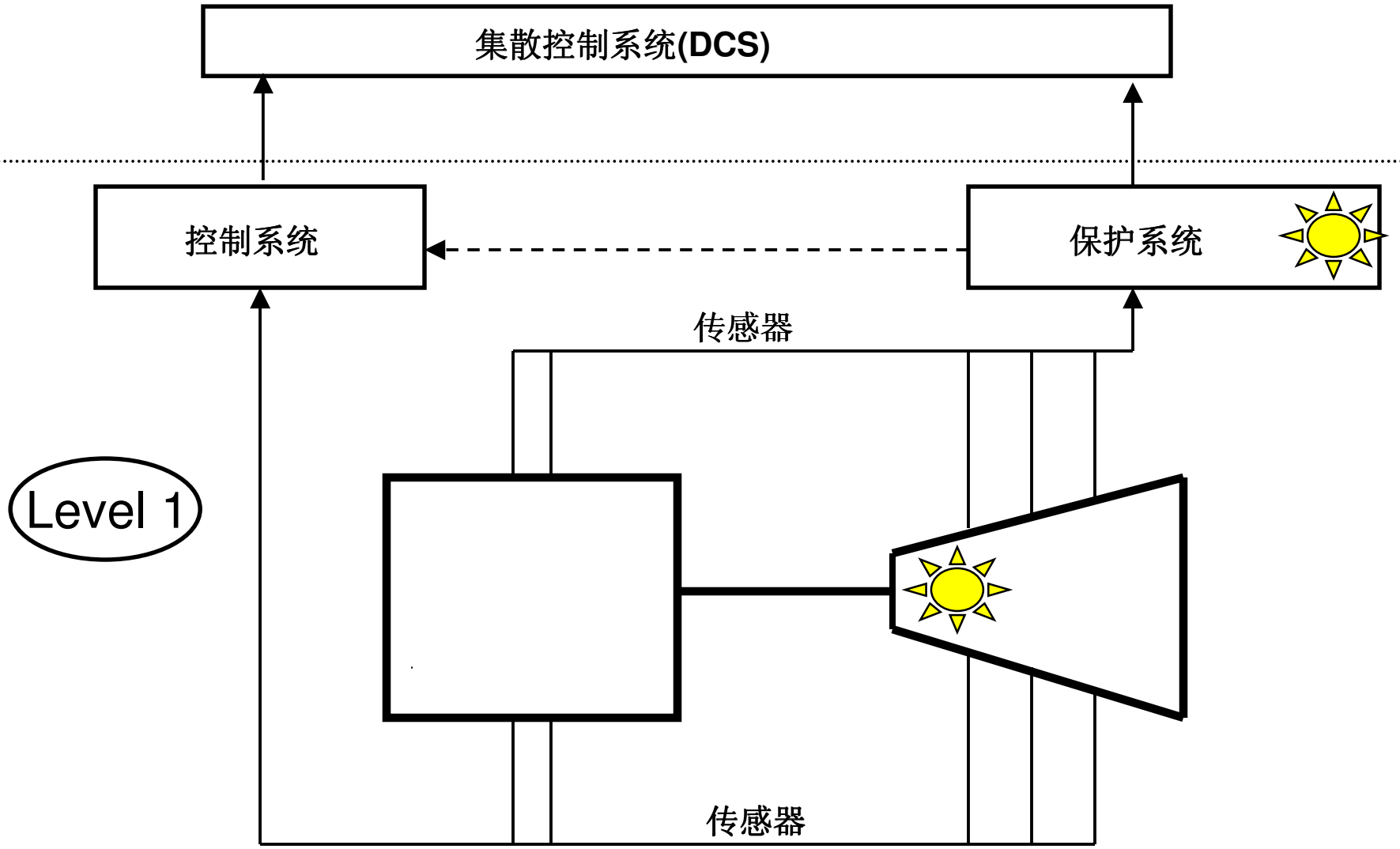
- 增加工厂的安全性
- 减少工厂运作成本
- 提高产品质量
- 最大化工厂的可利用率

机器监测





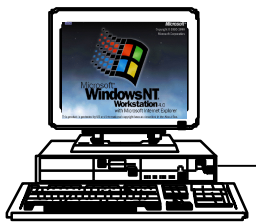
机器保护



机器保护

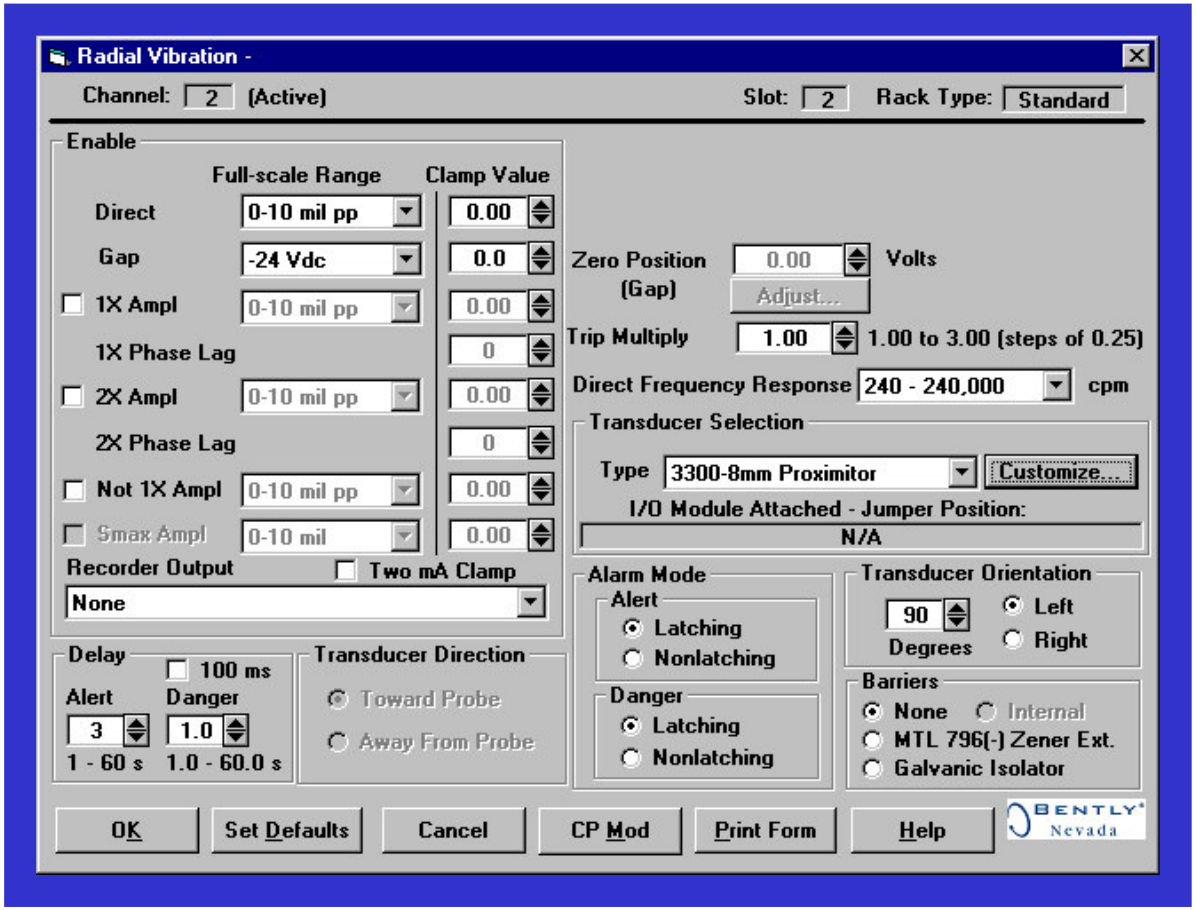
Relay Association -
Available Monitors:
Rack Type: Standard
Config ID:
Relay Slot: 3
2 3 4 5 6 7 8 9 10 11 12 13 14 15
Available Monitor Channels/Alarms:
S04C##A1 (Slot 4 Any Active Alert)
S04C##A2 (Slot 4 Any Active Danger)
S04C01A1 (Slot 4 Channel 1 Alert)
S04C01A2 (Slot 4 Channel 1 Danger)
S04C02A1 (Slot 4 Channel 2 Alert)
S04C02A2 (Slot 4 Channel 2 Danger)
S04C03A1 (Slot 4 Channel 3 Alert)
S04C03A2 (Slot 4 Channel 3 Danger)
S04C04A1 (Slot 4 Channel 4 Alert)
S04C04A2 (Slot 4 Channel 4 Danger)
And (*)
Or (+)
Enter
(
)
<---
CLR
Alarm Drive Logic:
S04C01A2 * S04C02A2 * S04C03A2 * S04C04A2
Standard Relay Association
Channel 1
Active
Latching Relays
And Voting Setup...
如果四个通道均指示 “Danger” 就触发继电器
Relay NE/NDE Switch Status:
Normally De-Energized
OK
Point Names
Cancel
Print Form
Help
BENTLY NEVADA

监测系统的特点

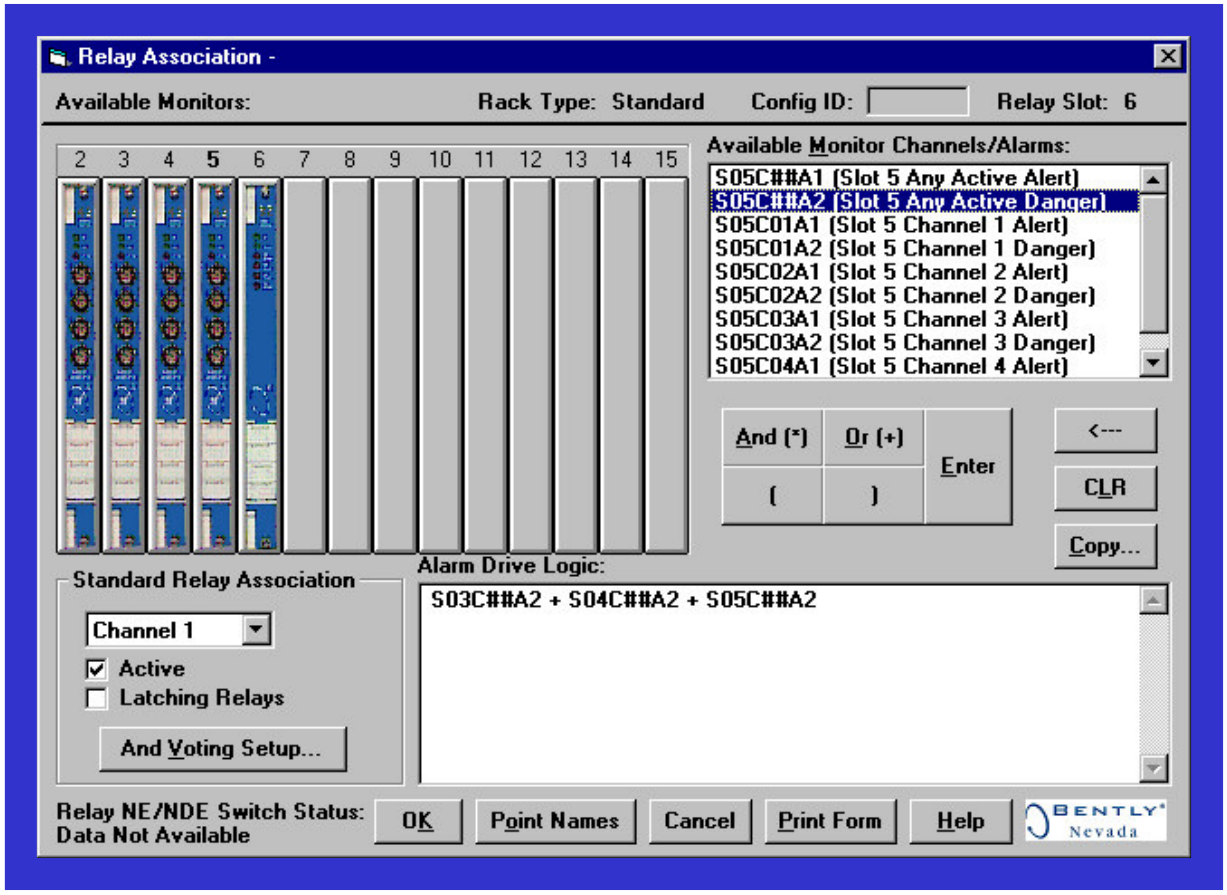


3500
Software

监测器组态


Radial Vibration -
Channel: 2 (Active)
Slot: 2
Rack Type: Standard
Enable
Full-scale Range
Clamp Value
Direct
0-10 mil pp
0.00
Gap
-24 Vdc
0.0
1X Ampl
0-10 mil pp
0.00
1X Phase Lag
0
2X Ampl
0-10 mil pp
0.00
2X Phase Lag
0
Not 1X Ampl
0-10 mil pp
0.00
Smax Ampl
0-10 mil
0.00
Recorder Output
Two mA Clamp
None
Zero Position (Gap)
0.00
Volts
Adjust...
Trip Multiply
1.00
1.00 to 3.00 (steps of 0.25)
Direct Frequency Response
240 - 240,000
cpm
Transducer Selection
Type
3300-8mm Proximitor
Customize...
I/O Module Attached - Jumper Position:
N/A
Alarm Mode
Alert
Latching
Nonlatching
Danger
Latching
Nonlatching
Transducer Orientation
90
Degrees
Left
Right
Barriers
None
Internal
MTL 796(-) Zener Ext.
Galvanic Isolator
Delay
100 ms
Alert
Danger
3
1.0
1 - 60 s
1.0 - 60.0 s
Transducer Direction
Toward Probe
Away From Probe
OK
Set Defaults
Cancel
CP Mod
Print Form
Help
BENTLY Nevada

继电器组态


Relay Association -
Available Monitors:
Rack Type: Standard
Config ID:
Relay Slot: 6
2 3 4 5 6 7 8 9 10 11 12 13 14 15
Available Monitor Channels/Alarms:
S05C##A1 (Slot 5 Any Active Alert)
S05C##A2 (Slot 5 Any Active Danger)
S05C01A1 (Slot 5 Channel 1 Alert)
S05C01A2 (Slot 5 Channel 1 Danger)
S05C02A1 (Slot 5 Channel 2 Alert)
S05C02A2 (Slot 5 Channel 2 Danger)
S05C03A1 (Slot 5 Channel 3 Alert)
S05C03A2 (Slot 5 Channel 3 Danger)
S05C04A1 (Slot 5 Channel 4 Alert)
And (*)
Or (+)
Enter
(
)
<---
CLR
Copy...
Alarm Drive Logic:
S03C##A2 + S04C##A2 + S05C##A2
Standard Relay Association
Channel 1
Active
Latching Relays
And Voting Setup...
Relay NE/NDE Switch Status:
Data Not Available
OK
Point Names
Cancel
Print Form
Help
BENTLY Nevada

3500 监测系统通讯

RS-232/422 Connectivity

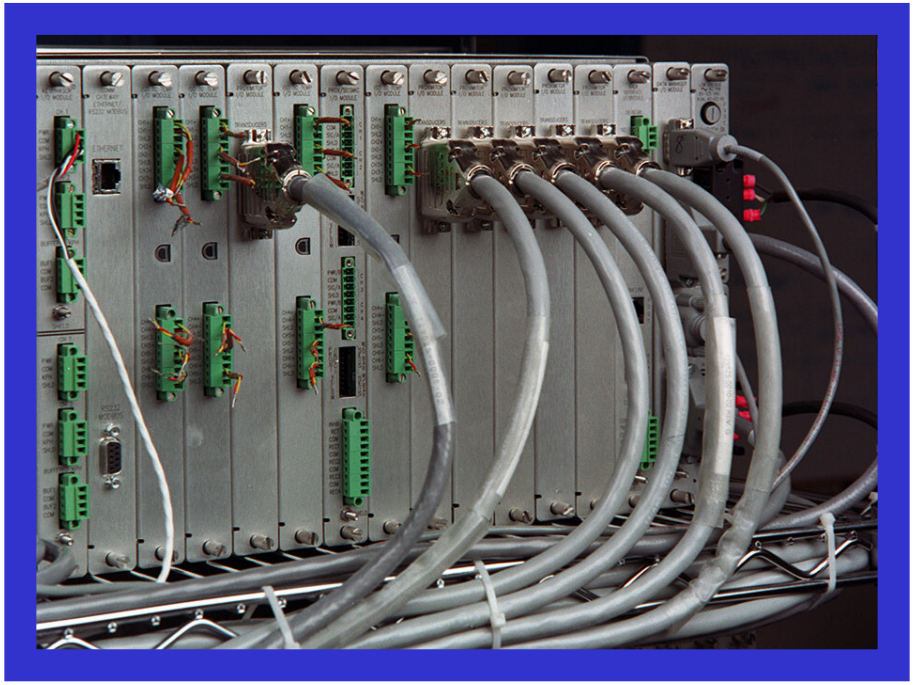
Network Connectivity 3500, Modbus, OPC with /91

Data Manager Connectivity

RS-232 Connectivity

Modbus Connectivity

内部和外部端子



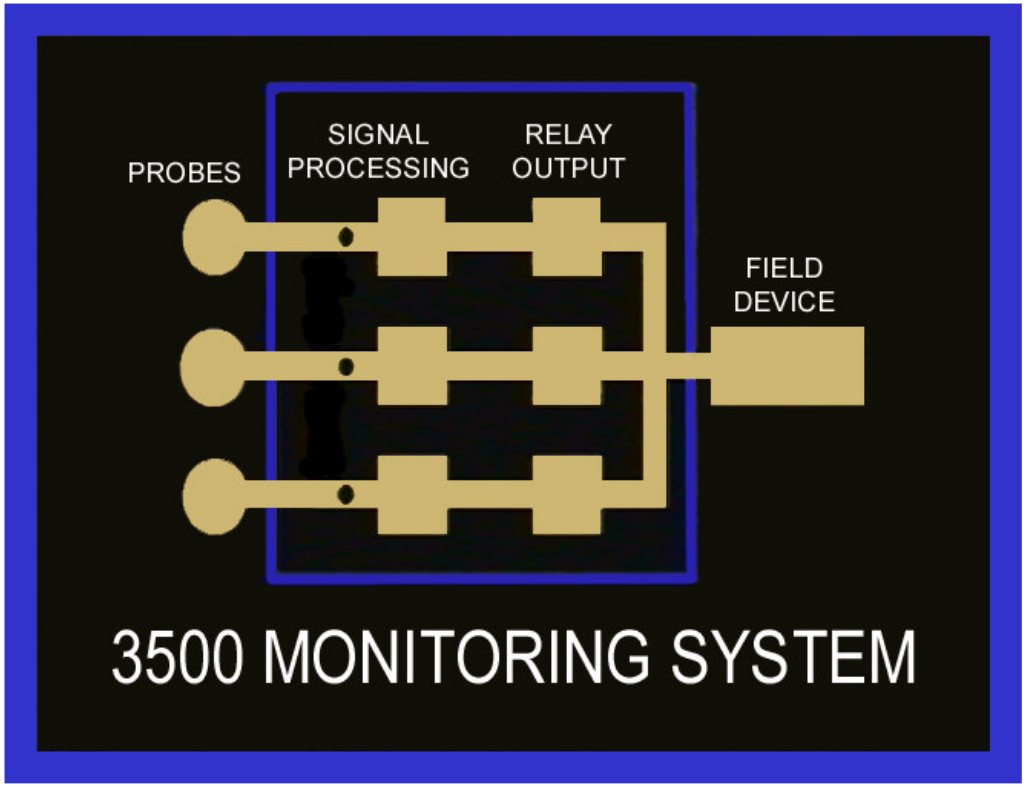
冗余的电源工作

“热插拔”监测器

冗余系统

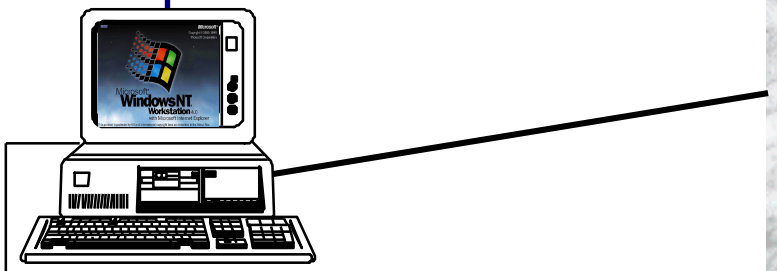
超速保护系统

三重冗余系统



计算机数据接入

Data Acquisition Computer



Plant Wide Ethernet

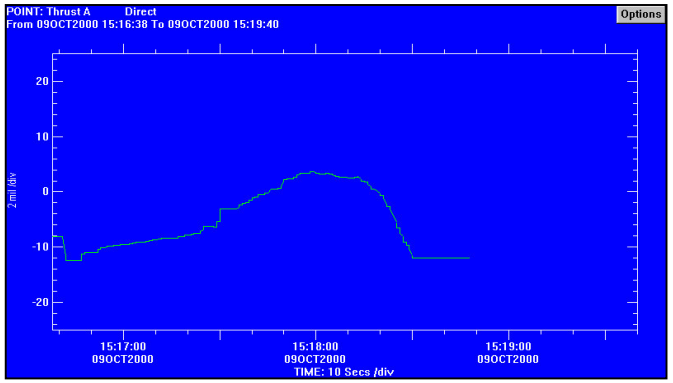
<---Display Computers

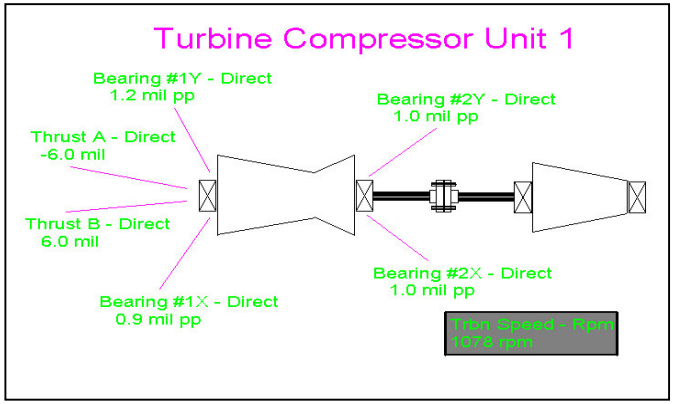
Plant Manager

Maintenance Manager

Machinery Specialist

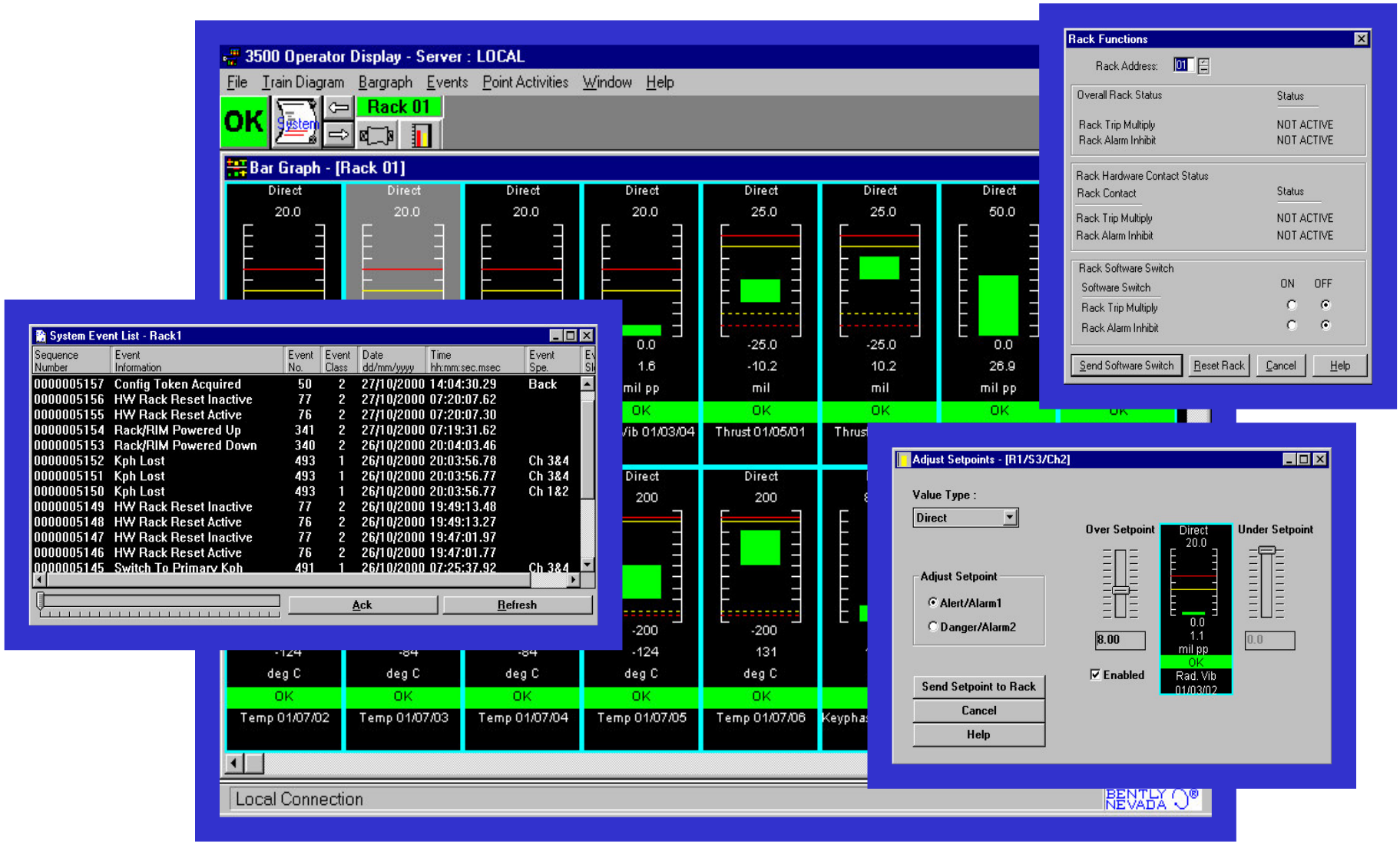
计算机显示范例


POINT: Thrust A Direct
From 09OCT2000 15:16:38 To 09OCT2000 15:19:40
Options
20
10
0
-10
-20
2 mil /div
15:17:00
09OCT2000
15:18:00
09OCT2000
15:19:00
09OCT2000
TIME: 10 Secs /div


Turbine Compressor Unit 1
Bearing #1Y - Direct
1.2 mil pp
Bearing #2Y - Direct
1.0 mil pp
Thrust A - Direct
-6.0 mil
Thrust B - Direct
6.0 mil
Bearing #2X - Direct
1.0 mil pp
Bearing #1X - Direct
0.9 mil pp
Trbn Speed - Rpm
1078 rpm

Direct 20.0 0.0 1.2 mil pp OK Bearing #1Y
Direct 20.0 0.0 0.9 mil pp OK Bearing #1X
Direct 20.0 0.0 1.0 mil pp OK Bearing #2Y
Direct 20.0 0.0 1.0 mil pp OK Bearing #2X
Direct 25.0 -25.0 -6.0 mil OK Thrust A
Direct 25.0 -25.0 6.0 mil OK Thrust B
Direct 50.0 0.0 27.0 mil pp OK Keyphasor Signal
Direct 200 -200 132 deg C OK Temp #1
Direct 200 -200 -124 deg C OK Temp #2
Direct 200 -200 -84 deg C OK Temp #3
Direct 200 -200 -84 deg C OK Temp #4
Direct 200 -200 -124 deg C OK Temp #5
Direct 200 -200 131 deg C OK Temp #6
Rpm 8000 0 1078 rpm OK Trbn Speed

模块接入和控制


3500 Operator Display - Server : LOCAL
File Train Diagram Bargraph Events Point Activities Window Help
OK
Rack 01
Bar Graph - [Rack 01]
Direct
20.0
25.0
50.0
0.0
1.6
-25.0
-10.2
10.2
26.9
mil pp
mil
OK
Thrust 01/05/01
200
-200
131
-124
deg C
Temp 01/07/02
Temp 01/07/03
Temp 01/07/04
Temp 01/07/05
Temp 01/07/06
Local Connection
BENTLY NEVADA
Rack Functions
Rack Address: 01
Overall Rack Status
Status
Rack Trip Multiply
NOT ACTIVE
Rack Alarm Inhibit
NOT ACTIVE
Rack Hardware Contact Status
Rack Contact
Status
Rack Software Switch
Software Switch
ON
OFF
Send Software Switch
Reset Rack
Cancel
Help
System Event List - Rack1
Sequence Number
Event Information
Event No.
Event Class
Date dd/mm/yyyy
Time hh:mm:sec.msec
Event Spe.
0000005157 Config Token Acquired 50 2 27/10/2000 14:04:30.29 Back
0000005156 HW Rack Reset Inactive 77 2 27/10/2000 07:20:07.62
0000005155 HW Rack Reset Active 76 2 27/10/2000 07:20:07.30
0000005154 Rack/RIM Powered Up 341 2 27/10/2000 07:19:31.62
0000005153 Rack/RIM Powered Down 340 2 26/10/2000 20:04:03.46
0000005152 Kph Lost 493 1 26/10/2000 20:03:56.78 Ch 3&4
0000005151 Kph Lost 493 1 26/10/2000 20:03:56.77 Ch 3&4
0000005150 Kph Lost 493 1 26/10/2000 20:03:56.77 Ch 1&2
0000005149 HW Rack Reset Inactive 77 2 26/10/2000 19:49:13.48
0000005148 HW Rack Reset Active 76 2 26/10/2000 19:49:13.27
0000005147 HW Rack Reset Inactive 77 2 26/10/2000 19:47:01.97
0000005146 HW Rack Reset Active 76 2 26/10/2000 19:47:01.77
0000005145 Switch To Primary Kph 491 1 26/10/2000 07:25:37.92 Ch 3&4
Ack
Refresh
Adjust Setpoints - [R1/S3/Ch2]
Value Type :
Direct
Adjust Setpoint
Alert/Alarm1
Danger/Alarm2
Over Setpoint
Under Setpoint
8.00
Enabled
Send Setpoint to Rack
Cancel
Help
Rad. Vib 01/03/02

复习

- 机器管理组件
- 3500系统规则
- 监测系统设计目标
- 独立的检测器特点
- 计算机数据接入特点
- 数据显示和传输

复习

- 接线和组态特点
- 冗余的支持特点
- 报警和操作特点
- 特殊的扩展
- 通讯特点

3500 Monitoring System

3500 监测系统