VABBIT PRO CAC 2INX series

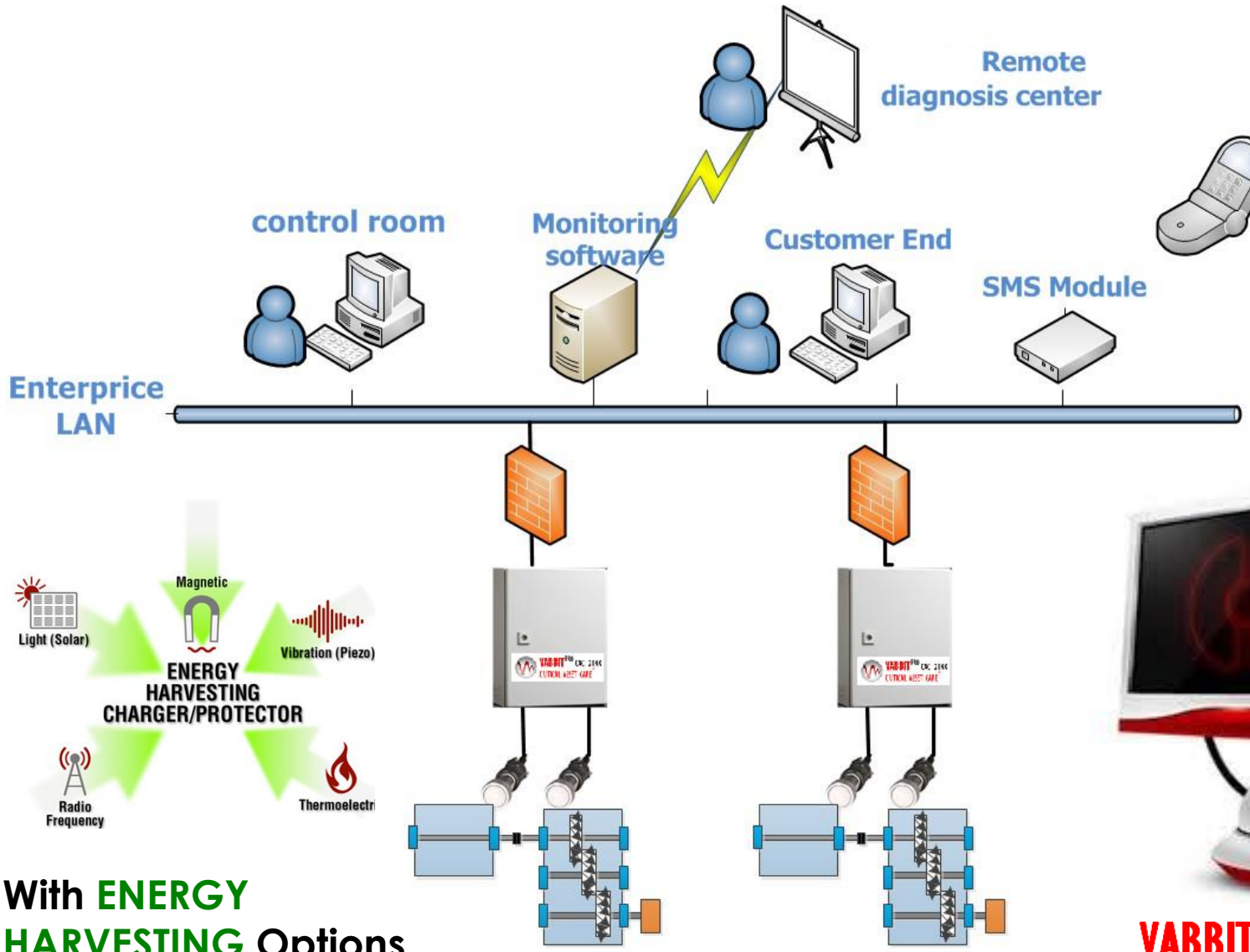
CRITICAL ASSET CARE

What's it all about?

Wired sensor system: Optical fiber or Ethernet or Remote GSM mobile / cellular network

Wireless : Zigbee network that allows to receive data from 60 wireless sensors.

System Layout



With ENERGY HARVESTING Options

VABBIT PRO CAC 21NX

Wired System

Specifications

Input Channels	**16 channels for Vibration (synchronous)** **4 channels for Process information,** **2 channels for tacho**
Maximal output channels	**1 channel relay output, dry contact**
Vibration signal input	
Channels	Max.16 Channels, 8,12,16 Optional
Compatible sensors	Acceleration, velocity, displacement, voltage, 4～20mA
Temperature measurement	
Channels	16channels, isolation input
Measurement range	-40～+125℃
Process measurement	
Channels	4 channels, isolation input
Signal range	12V or 4～20mA
SPEED measurement	
channels	2 channels
Compatible type	TTL, Eddy current, Hall
Triggering level	±4V～±30Vpp
Relay output	
channels	1 channel
type	SPST, normally open or close
Voltage, current	250V AC， 2A
Control end	server
Regular index	
Communications	1）Ethernet v2.0. IEEE802.3, TCP/IP, 10/100baseT 2）Wireless network
Humidity	95% RH without condensate / Ambient Temp (-40 – 70)℃

Wired System

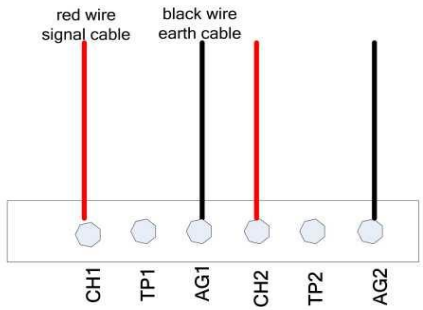
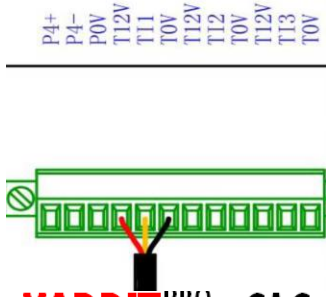


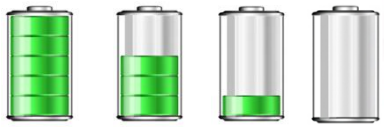
Photo 3-5



Maximal input Channels	**16 channels for Vibration / Temperature 8 channels for Process information, 2 channels for tacho**

Wireless Sensor

- Build-in acceleration and temperature sensor, collect velocity, acceleration, displacement and temperature signals simultaneously. The vibration signal can be displayed as spectrum waveform in software.
- Zigbee communication, for on site use specially, strong anti-jamming capability, 150 meters transmission.。
- Φ42 mm* H 65mm ，small volume, easy to fix and maintain.
- Low consumption design, collect data by every two hours, sustainable work for **2 years** or longer.
- Intelligent self-inspect function, warning for abnormal any time, saved time to check on site.
- Exia Ⅱ CT4 ，can be installed Hazardous area,IP65,waterproof, dustproof.



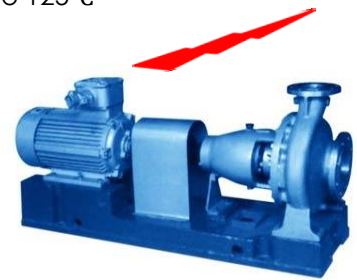
2 YEARS

Soon with ENERGY HARVESTING Options

Specifications

Vibration Parameter	Description	Remarks
Acceleration range	30g	
Frequency range	**5～10KHz (optional - Slow speed)**	
Linearity	1%	
Resonant frequency	16KHz	
Transverse Sensitivity	≤5%	
Electrical Isolation	$>10^8\Omega$	
Impact limit	1000g	
Sensing Geometry	Shear	
Signal type	Acceleration, velocity, displacement	
A/D conversion	**24 bit**	
Waveform sampling length	Max. 512K	
FFT Lines (Resolution)	800、1600、3200、**6400**	
Wireless Communication type	**Zigbee**	
Communicate frequency	2.4GHz	
Transmission distance	**150 meters** (plane distance)	
Dimensions	Height 80* mm, diameter 40 mm	
Mounting Screw thread size	6 mm	
Housing Material	Base: 316 L stainless steel Top: Aluminium alloy	
Power supply	ER 34335	Using standard configuration parameter, collect data in every 2 hours (16K acceleration signal, 8K velocity signal), can work for more than 2 year
Protection grade	IP65, waterproof, dustproof	
Weight	217g	
Storage capacity	128Kbytes	
Working temperature	(-35～70) ℃	The surface temperature can reach to 125℃
Anti-explosion options		
Anti-explosion identification	Exia Ⅱ C T4 Ga	Used for 0 area, 1 area, 2 area.
Temperature measurement options (not standard configuration, optional)		
Measurement range	(-55～125) ℃	

Sensing unit (temp,pressure, vibration, sound, current etc.)	**Smart Signal processing unit with encrypted data**
Short range radio 150 meter	**power unit (battery) 2 years**



Wireless Communication

Feature(s)	IEEE 802.11b	Bluetooth	ZigBee
Power Profile	Hours	Days	Years
Complexity	Very Complex	Complex	Simple
Nodes/Master	32	7	64000
Latency	Enumeration up to 3 Seconds	Enumeration up to 10 seconds	Enumeration 30ms
Range	100 m	10m	10m-300m
Extendibility	Roaming Possible	No	YES
Data Rate	11Mb/s	1Mb/s	250kb/s
Stack size	100+ kbyte	100+ kbyte	8-60 kbyte
Topology	Star	Star	Star, cluster, mesh
Security	Authentication Service Set ID (SSID), WEP	64 bit, 128 bit	128 bit AES and Application Layer user defined

The ZigBee system's battery life depends on the beacon interval i.e. the time interval between bursts of communication between the sensor and the controller. ***For 2 hours interval – battery last 2 years***

Wireless Sensor

iDA SINGAPORE

Comply iDA standard DA100927

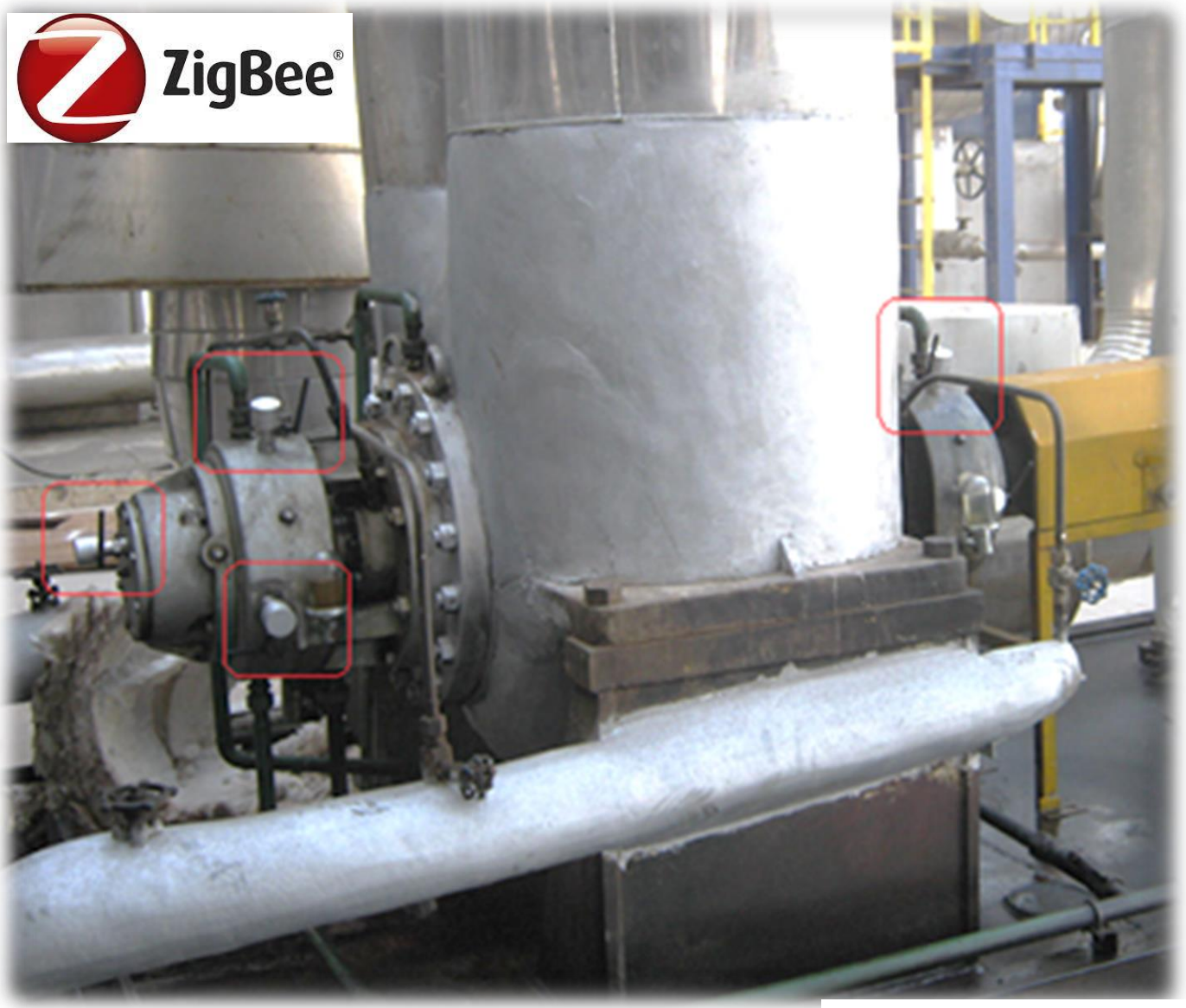
BAND	COVERAGE	DATA RATE	CHANNEL NUMBERS
2.4 GHz ISM	Worldwide	250 kbps	11-26
868 MHz	Europe	20 kbps	0
915 MHz ISM	Americas	40 kbps	1-10

Soon ,,,, with Perpetual Power (by Energy Harvesting tech) for Wireless transmission unit

2.4 GHz frequency – for signal communication / transmissions, powerful anti-jamming performance

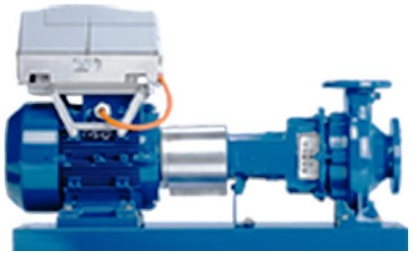
VABBIT PRO CAC 2INX

Wireless Sensor installation



MACHINERY MONITORING SYSTEM

MONITORING, TRENDING & DIAGNOSTIC SOFTWARE



http://127.0.0.1/VABBIT/main.aspx

Web enabled, No Client software installation needed

VABBIT PRO CRITICAL ASSET CARE - CAC 21NX

Username: Admin

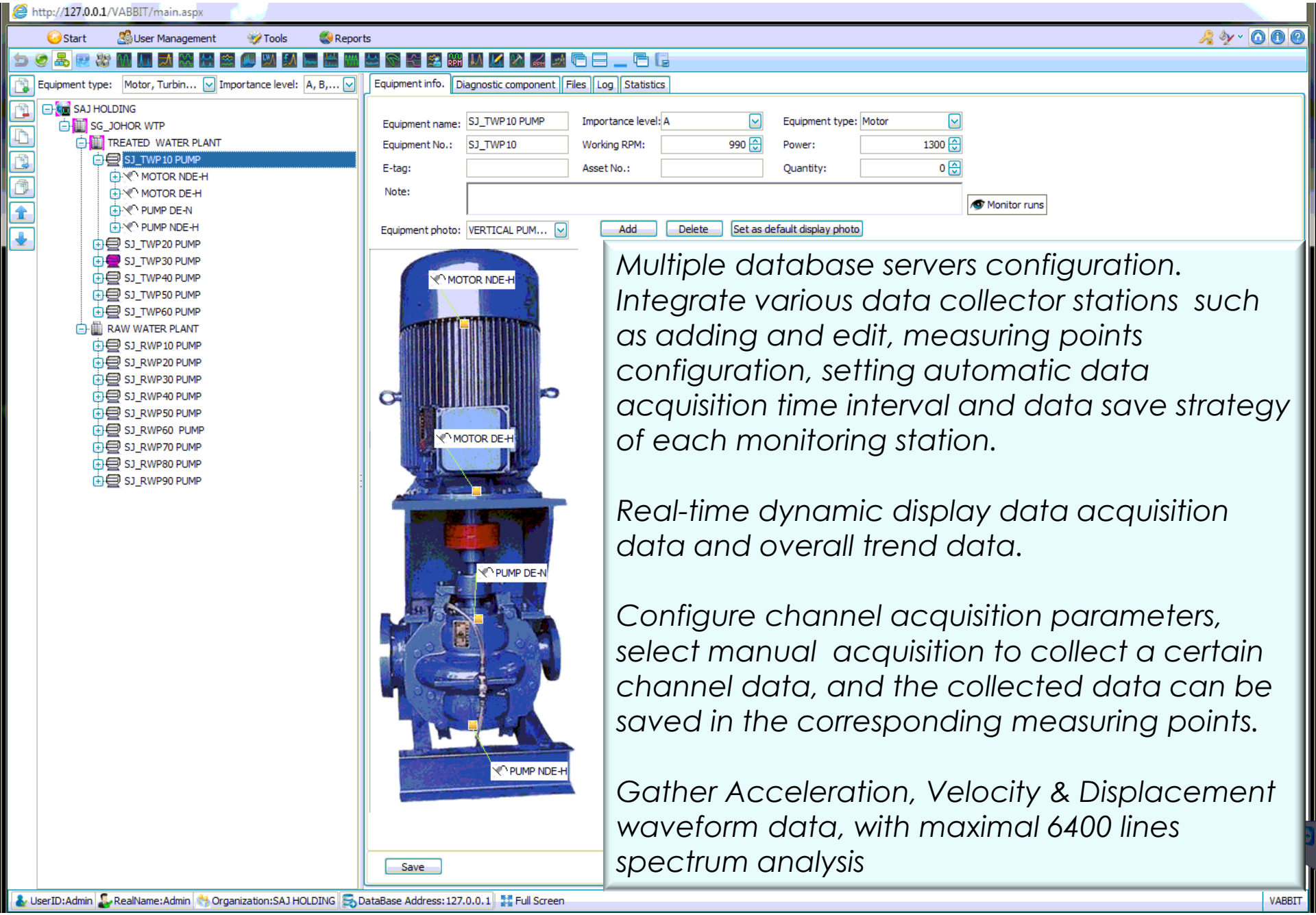
Password:

Full Screen

LOG

{reset}

VABBIT PRO CAC 21NX
CRITICAL ASSET CARE



Multiple database servers configuration. Integrate various data collector stations such as adding and edit, measuring points configuration, setting automatic data acquisition time interval and data save strategy of each monitoring station.

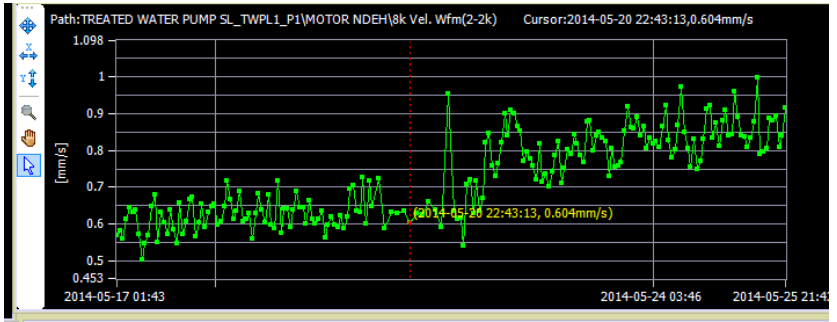
Real-time dynamic display data acquisition data and overall trend data.

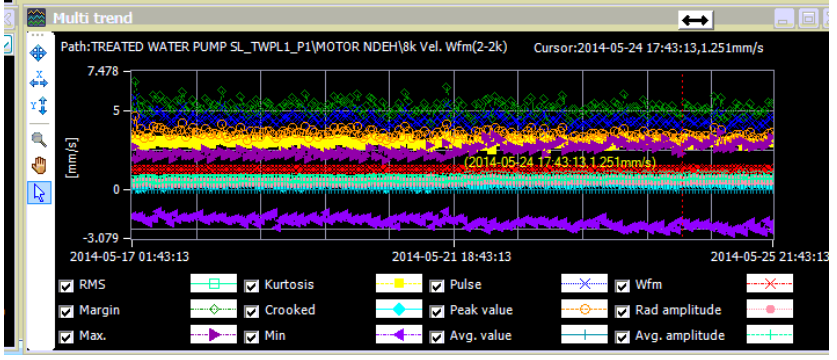
Configure channel acquisition parameters, select manual acquisition to collect a certain channel data, and the collected data can be saved in the corresponding measuring points.

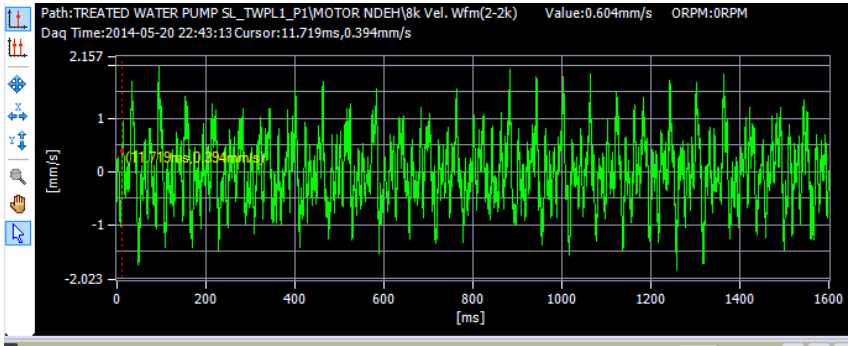
Gather Acceleration, Velocity & Displacement waveform data, with maximal 6400 lines spectrum analysis

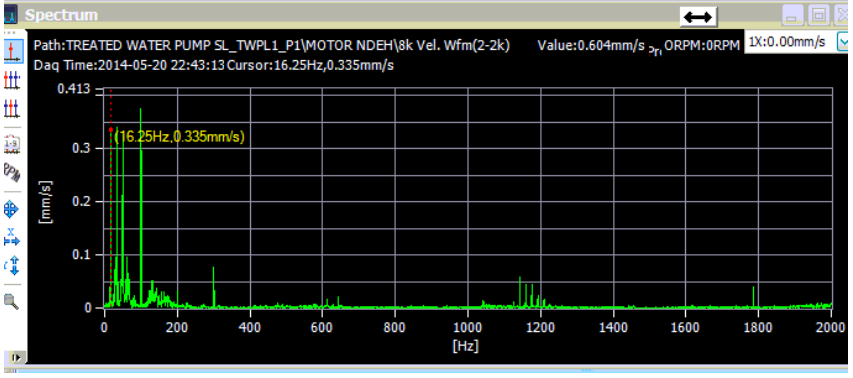
Data Display Plots

- Time domain multiple index and frequency index trend graph, overall trend display
- Time domain waveform, spectrum analysis, cepstrum, envelope demodulation. multiple time / frequency domain / waterfall diagram , long time domain waveform analysis , cross-phrase spectrum, 2 D / 3D data plots
  shaft orbit and filter shaft orbit. Full spectrum, Nyquist chart, polar coordinate chart and cascade graph etc









VABBIT - Windows Internet Explorer

http://127.0.0.1/VABBIT/main.aspx

Start | User Management | Tools | Reports

AREA A
- TREATED WATER PUMP SL_TWPL1_P1
  - MOTOR NDEH
    - 8k Vel. Wfm(2-2k)
    - 4k Dis. Wfm(2-1k)
    - 16k Acc. Wfm(2-15k)
  - MOTOR DEH
  - PUMP DEH
  - PUMP NDEH
- TREATED WATER PUMP SL_TWPL1_P2
- TREATED WATER PUMP SL_TWPL1_P3
- TREATED WATER PUMP SL_TWPL1_P4
- TREATED WATER PUMP SL_TWPL1_P5
- TREATED WATER PUMP SL_TWPL1_P6
- TREATED WATER PUMP SL_TWPL1_P7

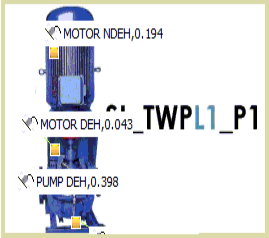
AREA B

Collection station:10000077 | Server:127.0.0.1|127.0.0.1

Daq Time	Value	Instr. SN	Description
2014-04-25 12:43:13	0.194	10000077	
2014-04-25 11:43:13	0.166	10000077	
2014-04-25 10:43:13	0.145	10000077	
2014-04-25 09:43:13	0.149	10000077	
2014-04-25 08:43:13	0.109	10000077	
2014-04-25 07:43:13	0.178	10000077	
2014-04-25 06:43:13	0.186	10000077	
2014-04-25 05:43:13	0.292	10000077	
2014-04-25 04:43:13	0.146	10000077	
2014-04-25 03:43:13	0.194	10000077	
2014-04-25 02:43:13	0.168	10000077	
2014-04-25 01:43:13	0.17	10000077	
2014-04-25 00:43:13	0.148	10000077	
2014-04-24 23:43:13	0.205	10000077	
2014-04-24 22:43:13	0.281	10000077	
2014-04-24 21:43:13	0.159	10000077	
2014-04-24 20:43:13	0.105	10000077	
2014-04-24 19:43:13	0.223	10000077	
2014-04-24 18:43:13	0.186	10000077	
2014-04-24 17:43:13	0.208	10000077	
2014-04-24 16:43:13	0.232	10000077	
2014-04-24 15:43:13	0.18	10000077	
2014-04-24 14:43:13	0.217	10000077	
2014-04-24 13:43:13	0.248	10000077	

Record 1 of 200

Production Line_AREA A | Production Line_AREA B

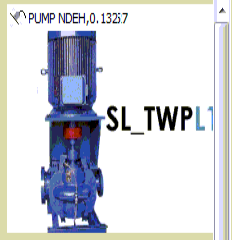


MOTOR NDEH	0.194 mm/s
MOTOR DEH	0.043 mm/s
PUMP DEH	0.398 mm/s

MOTOR NDEH	0.175 mm/s
MOTOR DEH	0.047 mm/s
PUMP DEH	0.418 mm/s

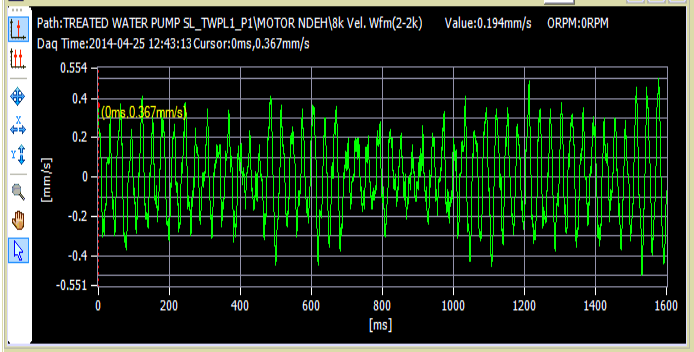
MOTOR NDEH	0.644 mm/s
MOTOR DEH	0.133 mm/s
PUMP DEH	6.085 mm/s

MOTOR NDEH	0.144 mm/s
MOTOR DEH	0.063 mm/s
PUMP DEH	0.918 mm/s

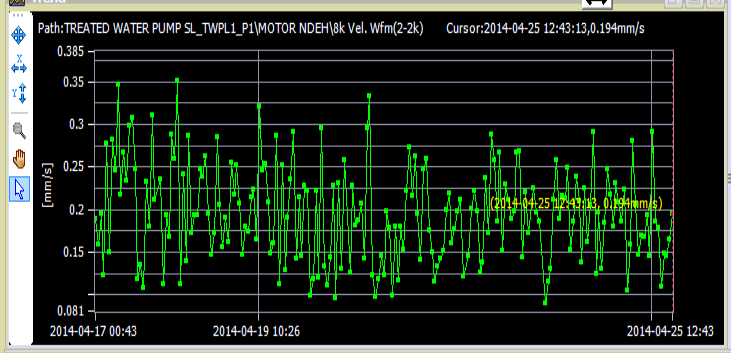


MOTOR NDEH	
MOTOR DEH	
PUMP DEH	

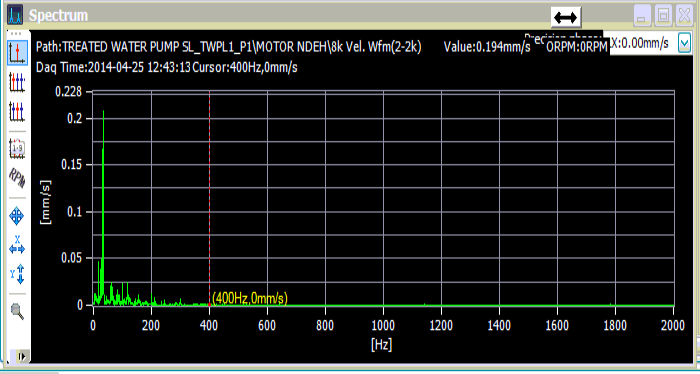
Waveform



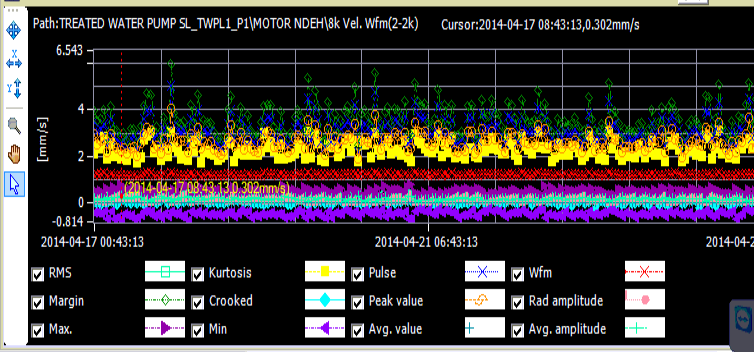
Trend



Spectrum



Multi trend

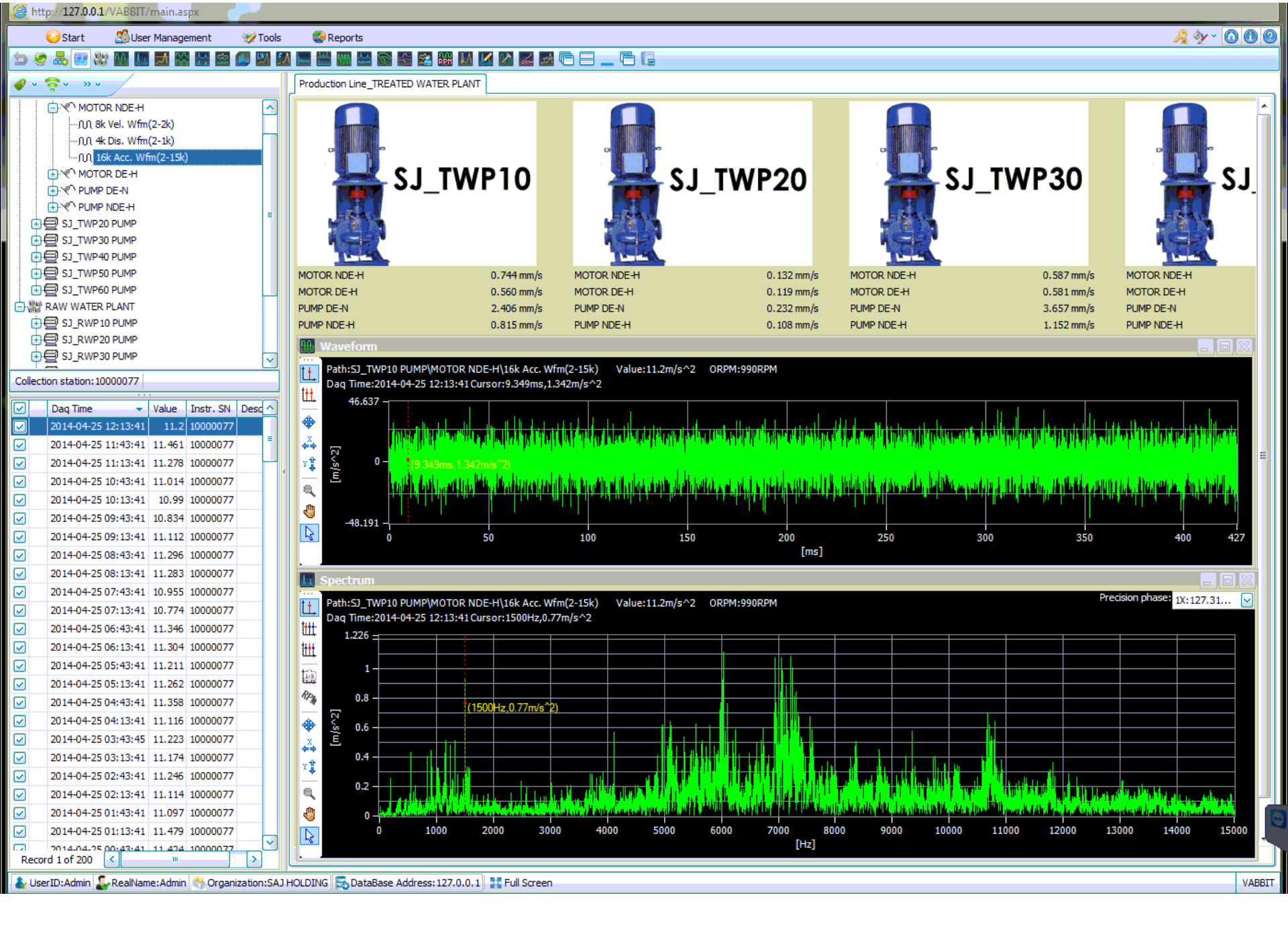


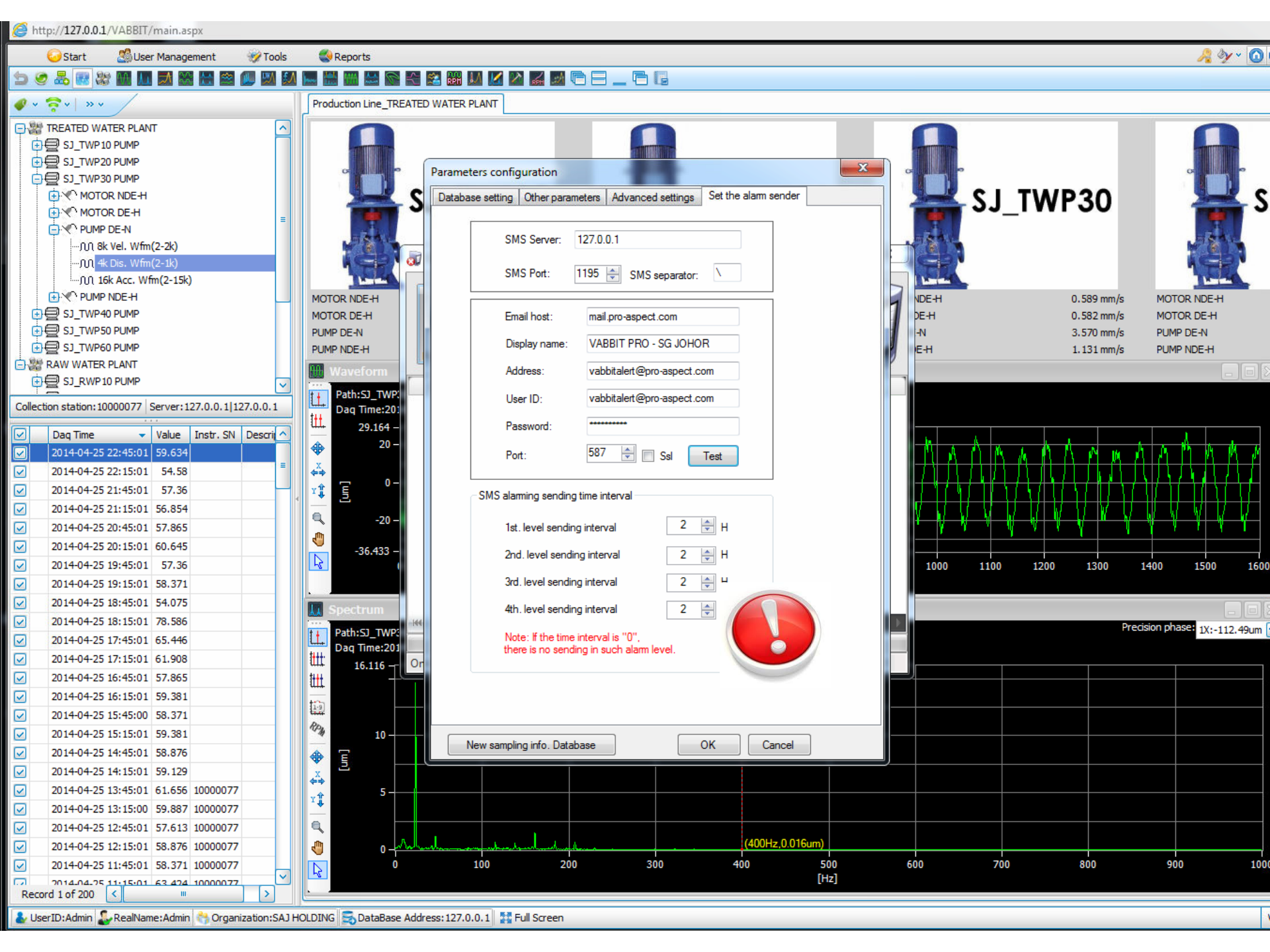
UserID:Admin | RealName:Admin | Organization:SAJ HOLDING | DataBase Address:127.0.0.1 | Full Screen | VABBIT

Done | Internet | Protected Mode: Off | 100%

Graphic control tools: Single cursor, double cursors, harmonic cursor, Side frequency cursor, graphics resizing, graphics moving, marks.

- **Automatic frequency calculation, bearing database.**
- **Fault case manager, diagnosis knowledgebase.**
- **Automatic report generation**

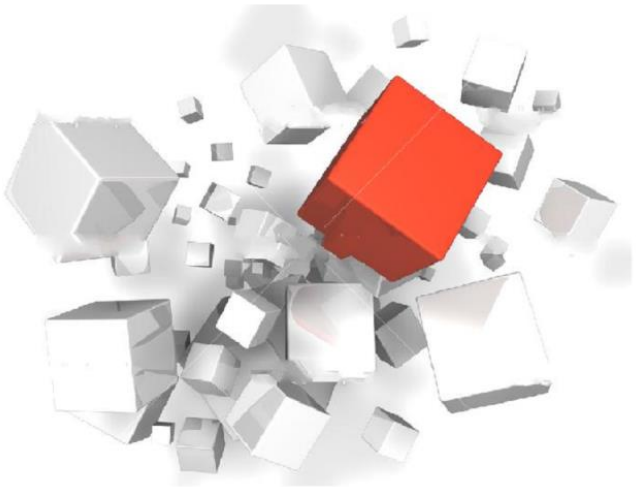

http://127.0.0.1/VABBIT/main.aspx
Start
User Management
Tools
Reports
MOTOR NDE-H
8k Vel. Wfm(2-2k)
4k Dis. Wfm(2-1k)
16k Acc. Wfm(2-15k)
MOTOR DE-H
PUMP DE-N
PUMP NDE-H
SJ_TWP20 PUMP
SJ_TWP30 PUMP
SJ_TWP40 PUMP
SJ_TWP50 PUMP
SJ_TWP60 PUMP
RAW WATER PLANT
SJ_RWP10 PUMP
SJ_RWP20 PUMP
SJ_RWP30 PUMP
Collection station:10000077
Production Line_TREATED WATER PLANT
SJ_TWP10
SJ_TWP20
SJ_TWP30
MOTOR NDE-H 0.744 mm/s
MOTOR DE-H 0.560 mm/s
PUMP DE-N 2.406 mm/s
PUMP NDE-H 0.815 mm/s
MOTOR NDE-H 0.132 mm/s
MOTOR DE-H 0.119 mm/s
PUMP DE-N 0.232 mm/s
PUMP NDE-H 0.108 mm/s
MOTOR NDE-H 0.587 mm/s
MOTOR DE-H 0.581 mm/s
PUMP DE-N 3.657 mm/s
PUMP NDE-H 1.152 mm/s
Waveform
Path:SJ_TWP10 PUMP\MOTOR NDE-H\16k Acc. Wfm(2-15k) Value:11.2m/s^2 ORPM:990RPM
Daq Time:2014-04-25 12:13:41 Cursor:9.349ms,1.342m/s^2
46.637
0
-48.191
(9.349ms,1.342m/s^2)
[m/s^2]
0 50 100 150 200 250 300 350 400 427
[ms]
Spectrum
Path:SJ_TWP10 PUMP\MOTOR NDE-H\16k Acc. Wfm(2-15k) Value:11.2m/s^2 ORPM:990RPM
Daq Time:2014-04-25 12:13:41 Cursor:1500Hz,0.77m/s^2
Precision phase: 1X:127.31...
1.226
1
0.8
0.6
0.4
0.2
0
(1500Hz,0.77m/s^2)
[m/s^2]
0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000
[Hz]
Daq Time Value Instr. SN Desc
2014-04-25 12:13:41 11.2 10000077
2014-04-25 11:43:41 11.461 10000077
2014-04-25 11:13:41 11.278 10000077
2014-04-25 10:43:41 11.014 10000077
2014-04-25 10:13:41 10.99 10000077
2014-04-25 09:43:41 10.834 10000077
2014-04-25 09:13:41 11.112 10000077
2014-04-25 08:43:41 11.296 10000077
2014-04-25 08:13:41 11.283 10000077
2014-04-25 07:43:41 10.955 10000077
2014-04-25 07:13:41 10.774 10000077
2014-04-25 06:43:41 11.346 10000077
2014-04-25 06:13:41 11.304 10000077
2014-04-25 05:43:41 11.211 10000077
2014-04-25 05:13:41 11.262 10000077
2014-04-25 04:43:41 11.358 10000077
2014-04-25 04:13:41 11.116 10000077
2014-04-25 03:43:45 11.223 10000077
2014-04-25 03:13:41 11.174 10000077
2014-04-25 02:43:41 11.246 10000077
2014-04-25 02:13:41 11.114 10000077
2014-04-25 01:43:41 11.097 10000077
2014-04-25 01:13:41 11.479 10000077
Record 1 of 200
UserID:Admin
RealName:Admin
Organization:SAJ HOLDING
DataBase Address:127.0.0.1
Full Screen
VABBIT


http://127.0.0.1/VABBIT/main.aspx
Start
User Management
Tools
Reports
Production Line_TREATED WATER PLANT
TREATED WATER PLANT
SJ_TWP10 PUMP
SJ_TWP20 PUMP
SJ_TWP30 PUMP
MOTOR NDE-H
MOTOR DE-H
PUMP DE-N
8k Vel. Wfm(2-2k)
4k Dis. Wfm(2-1k)
16k Acc. Wfm(2-15k)
PUMP NDE-H
SJ_TWP40 PUMP
SJ_TWP50 PUMP
SJ_TWP60 PUMP
RAW WATER PLANT
SJ_RWP10 PUMP
Collection station:10000077
Server:127.0.0.1|127.0.0.1
Daq Time
Value
Instr. SN
2014-04-25 22:45:01 59.634
2014-04-25 22:15:01 54.58
2014-04-25 21:45:01 57.36
2014-04-25 21:15:01 56.854
2014-04-25 20:45:01 57.865
2014-04-25 20:15:01 60.645
2014-04-25 19:45:01 57.36
2014-04-25 19:15:01 58.371
2014-04-25 18:45:01 54.075
2014-04-25 18:15:01 78.586
2014-04-25 17:45:01 65.446
2014-04-25 17:15:01 61.908
2014-04-25 16:45:01 57.865
2014-04-25 16:15:01 59.381
2014-04-25 15:45:00 58.371
2014-04-25 15:15:01 59.381
2014-04-25 14:45:01 58.876
2014-04-25 14:15:01 59.129
2014-04-25 13:45:01 61.656 10000077
2014-04-25 13:15:00 59.887 10000077
2014-04-25 12:45:01 57.613 10000077
2014-04-25 12:15:01 58.876 10000077
2014-04-25 11:45:01 58.371 10000077
Record 1 of 200
Parameters configuration
Database setting
Other parameters
Advanced settings
Set the alarm sender
SMS Server: 127.0.0.1
SMS Port: 1195
SMS separator: \
Email host: mail.pro-aspect.com
Display name: VABBIT PRO - SG JOHOR
Address: vabbitalert@pro-aspect.com
User ID: vabbitalert@pro-aspect.com
Password:
Port: 587
Ssl
Test
SMS alarming sending time interval
1st. level sending interval 2 H
2nd. level sending interval 2 H
3rd. level sending interval 2 H
4th. level sending interval 2
Note: If the time interval is "0",
there is no sending in such alarm level.
New sampling info. Database
OK
Cancel
SJ_TWP30
MOTOR NDE-H
MOTOR DE-H
PUMP DE-N
PUMP NDE-H
0.589 mm/s
0.582 mm/s
3.570 mm/s
1.131 mm/s
Waveform
Spectrum
Precision phase:
1X:-112.49um
(400Hz,0.016um)
[Hz]
[um]
UserID:Admin
RealName:Admin
Organization:SAJ HOLDING
DataBase Address:127.0.0.1
Full Screen

Know more !

VABBIT PRO

CRITICAL ASSET CARE - CAC 21NX



USER GUIDE

VABBIT PRO

MACHINERY MONITORING SYSTEM

USER GUIDE

MONITORING, TRENDING & DIAGNOSTIC SOFTWARE