

Pro-9900 Expert Mode Prognosis Monitoring System (PMS) Operation Manual V2.0

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Get Started (Monitor)

1 Launch PMS Application

Tap the PMS App icon on Windows desktop if the application is not started yet.



After entering the homepage, the dashboard displays the health status of the current measurement equipment. The area is divided into three parts: "Equipment Operation Health Trend and Forecast", "Vibration Status Trend", and "Equipment Information and Vibration Information". This dashboard is mostly used when observing trend changes over a long period of time. It does not have a sub-diagnosis function. Please select the red "Graph" option to enter the measurement and diagnosis.



rognosis Monitoring System - PMS APP v1.3.5													٥
🖻 Project 📔 Monitor 🛄 Data Analysis 🔒	Predicted Analysis	neport Exp	ort 👘	Environment	Setting								
System Reload 🕨 Start Collection 💿 Stop Collectio	• O Chart • Trend												
AO(Terom)													
🔞 🌑 📡 🌒 0001-01-01 00:00:00 RPM: 0.000 F:	a: 0.000 Fp: 0.000										(ch01) 1	ecom_00	CH1
<u>_</u> 0.8													
ещ 0.6 -													
Ŭ													
											(0.01) 1		
Health Indicator													
CV: 0.000	RMS: 0.0000			Vrms: 0.0	00								
Fa	Inner			Outer				Roller					
us: Save device successfully						Projec	t: pro001	Diagnosis	: G400_S 🛛	Predict: Ar	ma (Ready)	Remainir	ng Amour
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2 Start Monitoring

Tap the "Start Collection" button, real-time vibration value will be shown.



3 Examine the Monitor Information

Application start in "Chart" view which give you a live waveform of the measurement and a real-time frequency spectrum.

The following is brief description of the basic layout.



The real-time vibration measurement.

1

2

The frequency spectrum: A real-time frequency spectrum base on the measurement. You can zoom in the spectrum to examine spectrum detail.



3 The health indicator: Several health indexes are listed here. The most important index is the CV (Confidence Value). CV is an overall health condition score base on ISO-10816. The value of CV ranging is from 0 to 1. CV = 1 means perfectly healthy.

Scroll down a little bit there is a diagnosis information under the health indicator.

Health Indicator Updadte Time: 2019-11-26 18:36:32			
CV: 0.975	RMS: 0.0011 Inner: 0.000	Vrms: 0.069 Outer: 0.000	Roller: 0.000
Dagnosis Infor			
	1: 0.000 Fa: 0.000 Fp: 0.000		(ch02) Tecom_00_CH2
Status:		Projec	ct: Test001 Diagnosis: G400_S Predict: Arma (Ready) Remaining Amount: 0

4 The diagnosis information: PMS application will determine the potential problem of the target machine. The evaluation result will be shown in this area.

You can switch to the "Trend" view to examine the trend of key health indexes.



IS APP v1.4.1 Data Analysis Report Export 5 Environment Setting Predicted 6 😋 System Reload 🗼 Stop Collection
 Chart
 Tecom_00_CH1 (ch01) Tecom_00_CH1 - Trend 5 CV RMS Vrms ealth Indicato Updadte Time: 2019-11-26 16:50:29 CV: 0.963 RMS: 0.003 Project: Test001 | Diagnosis: G400_S | Predict: Arma (Ready) | Remaining Am ନ 🖽 🚍 🌖 🐽 🍪 🧟 へ 雪 4× 中 ⁵ ^{下午 04:50} 2019/11/26 **長**

The following is a brief description of the Trend view

The health index trend of the latest 100 measurements.

By default, both channels will be shown; you can choose to show one of the channels or all channels. This filter also applies to Chart view.



5

6

Environment Setting

1. Project

🜍 Pr	rognosis Monitoring Syste	m - PMS APP v1.3.5				- ø ×
4	Project Ron	itor 🔤 Data Analysis 🚮 Predicted	d Analysis 🕋 Repor 5			
Ð	Add 🗶 Clear	🚆 Save 🗢 Reset 🕀 Add	💥 Delete 🖌 Update 📑 Bind Current Cor	nfig 👱 Load Porject 👒 Dese	lect Project	
	- <mark>Project</mark> - DAO(Tecom)	Project List Project001 (pro001)	Project Setting			
	L. Tecom_00 (192.168	.168.10)	Project Name: Project001		Project Color: White	-
	- Channel - File		Default Project		Schemauc Inlage: Motor	
	- Database		Remark			
	- System					
			DAQ Count: 1		Channel Count: 2	
			-Barce Infomation(Report)-	and Taxanda		
			Auto Load	M Inserc		
			[rid]eccidaine],[rid]eccode],[itrid]			
			4			
			(Each item is separated by comma)			
C		^				
Statu	is: Save system successfi	ully			Project: pro001 Diagnosis: G400_S Predict: Arma (Ready)	Remaining Amount: 0
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1)	lict of ovi	cting projects				
	list of exi	sting projects				
<mark>2</mark>) _{τι}	no projec	t cottina:				
	le projec	t setting.				
- Pro	oject Setting—					
F	Project Name:	Project001		Project Color:	White	•
P	Project Code:	pro001		Schematic Image:	Motor	•
		Default Project				-
F	Remark	<i></i>				

Project Name, project Code and Remark will be shown on the project page, the Project color is actually the font color of those description. The Schematic Image is the project icon.



Project Name, project Code will also be used on diagnosis report. Refer to the Report Export chapter.



5

Binding Information: Number of DAQ and channels.



Some basic information you want to put on the diagnosis report. Refer to the Report Export chapter. There is several build-in project information can be added:

Auto Load		🗸 Marinsert	
[ProjectNar	[ProjectName] [ProjectCode] [RPM] [NumRotors]		

You can also add additional information in this area to further describe the device. Be sure to add a comma "," as new line.

Be sure to tap on the Binding Current Config button to save the channel settings to this project.

2. DAQ(Tecom)

Prognosis Monitoring System - PMS A		o ×
Project Bonitor	Data Analysis 📶 Predicted Analysis 🕋 Report Export Export	
💮 Add 🔀 Clear	Save Z Enable Collection	^
Project	Signal Monitor	
DAQ(Tecom)	Enable Check Valid Value	
Channel	Enable Check Valid Range1	
File	Enable Check Valid Value2	
— Database	Work Setting	
L. System	🛛 🖬 Enable Log 🛛 Data Type: 🛛 RawData 🧹 🗖 Enable Log Trigger	
	Enable Database	
	III 🛛 Enable PMS 🔳 Per Display 🛛 💙	
	Auto Prediction	
	O Normal_Trigger Data Count: 0 🗧	
	• Triner_Trigger	
	● Event_Trigger	
	connection Setting	
	Device name: recom_go	
	Channel Name: Tecom_00_CH1, Tecom_00_CH2	
	Host IP: 192.168.168.10	
	Com Port: 58888	
	Sample Rate: 16000 🗸 🐺 Sync to Channel	
< >	Sample Length: 8192 🗸	
Status:	 Project: pro001 Diagnosis: G400_S Predict: Arma (Ready) Remainin	ng Amount: 0
🚛 🔎 🛱 🚞 🌀	下午 2019 - 小田本中日 2019	05:28
he had been a second as a second s		

Scroll down!

Clear om) n_00 (192.168.168.10)	Data Analysis Tenable PMS Auto Prediction O Normal_Trigger Timer_Trigger Event_Trigger	edicted Analysis Report 1 Per Display Data Count: 0 🗧	Export Environment				
Clear om) n_00 (192.168.168.10)	Enable PMS Auto Prediction Normal_Trigger Timer_Trigger Event_Trigger	Per Display Data Count: D 🔶					
om) n_00 (192.168.168.10)	Auto Prediction Normal_Trigger Timer_Trigger Event_Trigger	Data Count: 0 🔶					
om) n_00 (192.168.168.10)	Normal_Trigger Timer_Trigger Event_Trigger Connection Setting	Data Count: 0 🚖					
n_00 (192.168.168.10)	Timer_Trigger Event_Trigger Connection Setting						
	Event_Trigger Connection Setting						
	Connection Setting						
	Device Name:	Tecom_00	<u> </u>				
	Channel Name:	Tecom_00_CH1, Tecom_00_CH2		/			
	Host IP:	192.168.168.10					
	Com Port:	58888					
	Sample Rate:	16000 ~	Sync to Channel				
	Sample Length:	8192 ~					
	Sensitivity:	100.00	100.00				
	Sensitivity Units:	mVolts/G ~					
		Disconnection					
	o ci	Disconnection		(4)			
	Close						
	c# Read Data						
	C# Set Rate						
~ ~ ^				Pro	oject: Demo001 Diagnosis: C	5400_S Predict: Polynomial Rem	aining Ar 下午 04·2
- Et 🔚 🔘	🕒 🙆 😥					^ 1 ↓ × 英 う 。	010/11/2
		Channel Name: Host IP: Com Port: Sample Rate: Sample Length: SenstWity: SenstWity Units: Command Test © Open © Close @ Read Data © Set Rate	Channel Name: Tecom_00_CH1, Tecom_00_CH2 Host IP: 192.168.168.10 Com Port: 58888 Sample Rate: 16000 Sample Length: 8192 Senstwity: 100.00 Senstwity: 100.00 Senst	Channel Name: Tecom_00_CH1, Tecom_00_CH2 ✓ ✓ Host IP: 192.168.168.10 Com Port: 58888 Sample Rate: 16000 ✓ ➡ Sync to Channel Sample Length: 8192 ✓ SenstWty: 100.00 ♀ 100.00 SenstWty Units: Twots/6 ✓ Command Test ♥ Close ℝ Read Data ♥ Set Rate ■ Set Rate	Channel Name: Tecom_00_CH1, Tecom_00_CH2 3 Host IP: 192.168.168.10 Com Port: 58888 Sample Rate: 16000 I Sync to Channel Sample Length: 5192 9 Senstwity: 100.00 100.00 Senstwity: 100.00 100.00 Senstwity: 100.00 100.00 Senstwity: Disconnection 4 Image: Set Rate Set Rate 100.00	Channel Name: Tecom_00_CH1, Tecom_00_CH2 Host IP: 192.168.168.10 Com Port: 58888 Sample Rate: 16000 Sample Length: 8192 Senstvity: 100.00 Senstvity: 100.00 Senstvity: 100.00 Disconnection Command Test Senstvity: Disconnection Project. Demo001 Diagnoss: C	Channel Name: Tecom_00_CH1, Tecom_00_CH2 Host JP: 192.168.168.10 Com Port: 58888 Sample Length: 5192 SenstVry Ints: mvoks/G Command Test © Open © Cose © Read Data © Set Rate Deconnection ↓ Project Demo00! Diagnosis G400_S Predict: Polynomial Rem Command Test © Set Rate Project Demo00! Diagnosis G400_S Predict: Polynomial Rem Command Test © Open © Set Rate

Field	Description
Enable Check Valid Value	Filtering data collection base on the setting. Usually, set the Min Valid Value, the value will be collected only when the vibration is larger than the minimum value. You can specify to use the raw value or RMS.
Enable Check Valid Range1	Reserved
Enable Check Valid Value2	Reserved

2 Work Setting:

Work Setting	
🗹 Enable Log 🛛 Data Type: 🛛 RawD	ata 🤟 📃 Enable Log Trigger
Enable Database	
🗹 Enable PMS 📃 Per Display	
Auto Prediction	
O Normal_Trigger Data Count: 0	
Timer_Trigger	
Event_Trigger	
Field	Description

Enable Log	Enable store measurement in file.
Data Type	Data format of the stored data, usually RawData is selected.
Enable Database	Make sure it is database is disabled
Enable Log	Reserved
Trigger	
Enable PMS	Make sure this one is enabled.
Per Display	

Z Auto Prediction Inter	val(sec): 0 🖨 Max Size: 0 🖨 Min Size: 0 🖨 Predicted Rate(%): 0 🖨
Auto Prediction	Interval: Prediction interval
	Max Size: Maximum data counts for prediction
	Min Size: Minimum data counts for prediction
	Predicted Rate (%): Predicted ratio base on the actual data count
	of the prediction. For example, if the actual data count in this
	interval is 10,000 and the predicted rate set to 20% then the
	prediction is targeting at 12,000.
• Normal_Trigger	Data Count: 0
Normal_Trigger	Trigger the diagnosis when data collected reach the data count.
O Timer_Trigger I	nterval(sec): 0 🖨 Data Count: 0 🖨 🗖 Per Calculate
Timer_Trigger	Trigger the diagnosis periodically and with minimum required
	data count.
	Per Calculate: Force to do diagnosis per sample.
Event_Trigger	Max Size: 0 📮 🔲 Per Calculate
Event Trigger	Reserved

Connection Setting:

Device Name:	Tecom_00		
Channel Name:	Tecom_00_CH1, Teco	om_00_CH2 T	
Host IP:	192.168.168.10		
Com Port:	58888		
Sample Rate:	16000	V 🖏 Sync to Channel	
Sample Length:	8192		
Sensitivity:	100.00	 100.00 	
Sensitivity Units:	mVolts/G	✓	
Field		Description	
Device N	ame	The name of the DAQ	
Device N Channel	ame Name	The name of the DAQ Channel selection	
Device N Channel Host IP	ame Name	The name of the DAQ Channel selection IP address of the DAQ for communication.	
Device N Channel Host IP Com Port	ame Name t	The name of the DAQChannel selectionIP address of the DAQ for communication.Port number for communication	

Sample Rate	Sample rate, valid values are 16000 and 32000.
Sample Length	Sample Length
Sensitivity	Make sure it is set to the same value of your sensor sensitivity
Sensitivity Units	Keep it as mVolts/G



Command Test Open Close Read Data Set Rate	
Field	Description
Open	Open connection with DAQ
Close	Close connection with DAQ
Read Data	Send a single request to DAQ for testing the communication.
Set Rate	Send a "Set Rate" command to DAQ for testing the communication.

3. Channel

	💙 Prognosis Monitoring System - PMS APP	v1.3.5							- 0
	Project 🔡 Monitor 🔤	Data Analysis 🛛 📶 Predicted 1	Analysis 🛛 🏫 Report E	xport 🔝 Environm					
	Actor of the success of the suc	Save C Reset Auto Ad Trannet Lst (ch02) Tecom_00_CH2 1	d	Move UP Move D Tecom_00 Tecom_00_CH1 Tecom_00_CH1 Tecom_00_CH1 A A 80 B 3 B 10240 B 1800 B 0.000 B 0.000 B 0.000 B	OWNI Update Rolor Number of Rotors Cutoff Frequency Low frequency High frequency High frequency Gear fp(Driven Gear) Number of Gears Inner Frequency Outer Frequency Outer Frequency Roller Frequency Roller Frequency	2 Database Device Database Device Database Chann 1000 5120 0.00 0.00 0.00 0.000 0.000 0.000 0.000 Database Chann Dat	e Name: dev001 el Name: ch01	3	
	Status: Save device successfully	🐵 📦 🌍				Project: pro001	Diagnosis: G400_S	Predict: Arma (Ready) へ 宮 (× 中	Remaining Amoun 下午 05:29 2019/11/20
1	Channel List: L	ist of existing	g channel	S.					
<mark>2</mark>)	Database Map	ping:							
	Physical Device Name	Tecom_00		▼ Dat	abase Device Nam	ne: dev001			
	Dhysical Channel Name	Tocom 00 CH1		T Dat	abaca Channel Ma	mot ch01			

Field	Description
Physical Device Name	Path name for the CV log file and raw data file.
Physical Channel Name	Path name for the channel specific CV log file and raw data file.
Database Device Name	Reserved
Database Channel Name	Reserved

3 Diagnosis Parameter:

• PMS Type:

PMS Type		
Mode Type	A	~
Vibration Standard	Class I (<15kW)	~

Field	Description
PMS Type	Reserved
Vibration Standard	Select base on the rated power.

• Diagnosis

- Diagnosis	10	
Threshold	80	(
Threshold(Vrms)	3	
Sample Rate	16000	
Sample Length	8192	~

Field	Description
Threshold	There are 17 known defects. The application will calculate the confidence level of each defects. Only when the confident level > Threshold will be shown in the diagnosis information field.
Threshold (Vrms)	Diagnosis process will be activated only when the Vrms > Vrms Threshold.
Sample Rate	Keep it the same as DAQ setting
Sample Length	Keep it the same as DAQ setting

• Mechanical Properties

Mechanical Properties		
Fa(Spining) in RPM	1800	-

Field	Description
Fa (Spinning) in RPM	Motor spinning speed in RPM

Cutoff Frequency

- Cutoff Frequency		
Low frequency	1000	\$
High frequency	5120	÷

Field	Description
Low frequency	Ignore frequency lower than low frequency
High frequency	Ignore frequency higher than high frequency

Rotor

Rotor		21
Number of Rotors	0	÷

Field	Description
Number of Rotors	Number of rotor bars in a motor

• Gear

-Gear		
fp(Driven Gear)	0.00	\$
Number of Gears	0.00	▲ ▼

Field	Description
Fp(Driven Gear)	The output speed of a gear box
Number of Gears	The number of teeth of first driven gear.

• Ball Bearing Freq

Ball Bearing Freq		
Inner Frequency	0.000	÷
Outer Frequency	0.000	▲
Roller Frequency	0.000	

Field	Description	
Inner Frequency	Ball Pass Frequency of Inner Ring	
Outer Frequency	Ball Pass Frequency of Outer Ring	
Roller Frequency	Ball Spin Frequency	

• Ball Bearing Info

Ball Bearing Info		
Contact Angle	0.000	•
Bearing Diameter	0.001	•
Number of Balls	0	<u>+</u>
Ball Diameter	0.000	4

Field	Description
Contact Angle	Contact Angle
Bearing Diameter	The theoretical median diameter of a bearing, which passes through the center of the balls.
Number of Balls	Number of balls
Ball Diameter	Diameter of balls

• Value Convert Algorithm

Value Convert Algorithm	
Fa Calculation	
Fp Calculation	

Reserved engineering interface.

4. File

Manage the measured data.

Prognosis Monitoring System - PMS APP v1.4.0			– a ×
Project 📔 Monitor 🗖 Data Analysis 🚮 Predicted	Analysis Report Export Content Setting		
Image: Constraint of the second se	\DataLog\ \CVLog\ 60): 0	Save Decimal Point: 6	
Status: Save channel successfully		Project: pro001 Diagnosis:	G400_S Predict: Polynomial Remaining Amount: 0
💼 🔎 🛱 🔚 🥥 🐴 🔞 🕤			へ 雪 ↓× 中 □ 下午 03:44
			2019/11/21 16

Field	Description
Enable File	Enable/Disable store measured data
File Path (Raw)	The file path for storing the raw data.
File Path (CV)	The file path for storing the CV value.
File Interval (sec)(Raw)	Specify the time interval of a single raw data file.
Save Decimal Point:	Floating point precision of the data value.
File Retention Months (Raw)	Keep only specific months of raw data. 0 means no limit.
File Retention Months (CV)	Keep only specific months of CV log. 0 means no limit.

5. Database (Reserved)

6. System

Prognosis Monitoring System - PMS Ai	PP v1.3.5	- 0
Project B Monitor	🛛 Data Analysis 🛛 📶 Predicted Analysis 🛛 🚮 Report Export 🛛 🍪 Enviro	
🔁 Add 🗙 Clear	P Save	
Project	Connection Setting	
DAQ(Tecom)	System Start Time 2019-11-20 17:25:19	1
- Channel	Data collection after system start	System Start To Run(sec): 60
File	Disconnected Reconnect	System Reconnection Time(sec): 30
Database System	Donot need to load the last project after system start	Sensor Disconnection Detection(sec): 5
	PMS Setting	
	Predict DLL Type: Arma	PMS DLL Type: G400_S
	Show Health Indicators	Show Diagnosis Information
	Show Frequency Domain Diagram	Show Predicted Information
	Diagnostic result only show abnormal items	
	System Setting	
	Set Language:	<mark>3</mark>
	System securys are moden (Researc)	
۲ ک		
Status: Save database successfully		Project: pro001 Diagnosis: G400_S Predict: Arma (Ready) Remaining Am
🕂 🔎 🛱 🧮 🌍) 🐵 🍏 🌍 👘	下午05:31 へ 雪 d× 中 🛅 2019/11/20
<u> </u>		
Connection Set	ettina [.]	
-Connaction Sotting		
-Connection Setting		

Connection Setting		
System Start Time 2019-11-20 17:25:19		
Data collection after system start	System Start To Run(sec): 60	* *
Disconnected Reconnect	System Reconnection Time(sec): 30	4.
Donot need to load the last project after system start	Sensor Disconnection Detection(sec): 5	•

Field	Description
Data collection after system start	Start collecting data after system start.
System Start To Run(sec)	Waiting Time before start collecting data after system start.
Disconnected Reconnect	Reconnect to DAQ automatically if disconnected.
System Reconnection Time (sec)	Waiting time before reconnect to DAQ after disconnected.

Do not need to	Do not load last project instead, the default project will be
load the last	loaded.
project after	
system start	
Sensor	Timeout for sensor disconnect detection.
Disconnection	
Detection (sec)	



2 PMS Setting: -PMS Setting-

Predict DLL Type: Arma	PMS DLL Type: G400_S	
✓ Show Health Indicators	Show Diagnosis Information	
Show Frequency Domain Diagram	✓ Show Predicted Information	
Diagnostic result only show abnormal items		

Field	Description
Predict DLL Type	Select the prediction algorithm, Polynomial or Arma.
PMS DLL Type	Do not change this setting.
Show Health Indicators	Show or hide the health indicators.
Show Diagnosis Information	Show or hide the diagnosis information.
Show Frequency Domain Diagram	Show or hide the real-time frequency spectrum.
Show Predicted Information	Show or hide the predicted information.
Diagnostic result only show abnormal items	Enable: If the diagnosis result is normal, nothing will be shown in the diagnosis information field. Disable: Diagnosis result always shown.



3 System Setting:

System Setting-			
Set Language:	•		
System setting TW			
CN			
EN			

Field	Description
Set Language	Select the interface language
System settings	Hide the system setting (Not recommended). Restart PMS
are hidden	Application is required.
(Restart)	

Project

The diagnosis of a machine highly depends on the mechanical and electric characteristics. For example, the rated power and speed are critical for a typical motor diagnosis. For bearing, there are much more bearing related information is required for bearing system diagnosis. A project is a collection of these information for a specific machine.

You can find existing projects in Project page.



You can tap on an existing project to load the settings.

If you need to create a new project (New Device), tap on the + icon. It will lead you to the Environment Setting/Project page to create a new one. Refer to Environment Setting Project section for the project creating and setting detail.

Data Analysis

Load stored data and do an off line analysis and diagnosis.

Prognosis	Monitoring	1	PMS APP	P v1.4.2 Data Ana	alysis	n Predic	ted Analysis	Re	port Export	S	nvironment	Setting						-	- 0	×
* Parame	2	E Load	i File 🕜	Run	Clear	Data Count:	:0 Per (Calculate (D Accelerati	on 🔍 Velo	city 🗨 Env	elope 🛄								
Spectrum(Acceleration, g)																				
-Health Ind CV Fa	licator—					RMS Inner					Grms Outer				Roller					
			-1-44										[ni			- 400 c l p	- di te De la co			
Status: Syste) 📑			•	۵	P _{int}							Projec	t: prouut	Diagnosis: (3400 <u>-</u> S Pr	∼ 🖘 ປຸ×	英 5	上午 10:54 2019/12/2	

Tap on load file to load the raw data from existing file.

Tap on Parameter Setting to examine the diagnosis parameters. Be sure the parameters are correct otherwise the diagnosis result will be incorrect.

🔅 Parameter Setting	🚽 Load File 🛛 🕞 Run 🥒	ጶ Clear	Data Count:28 📃 P	er Calculate	O Acceleration	🕨 Velocity 🔍 Envelope	11 🐘	
Diagnosis Parameter —								
Use Channel: Default			~					
PMS Type			_ Rotor —			Ball Bearing Info		
Mode Type	А	~	Number of Rotors	0	÷	Contact Angle	0.000	*
Vibration Standard	Class II (15-75kW)	\sim	Cutoff Frequency	11 11		Bearing Diameter	0.807	4
Diagnosis			Low frequency	1000	-	Number of Balls	8	•
Threshold	80	-	High frequency	5120	÷.	Ball Diameter	0.187	-
Threshold(Vrms)	3		Gear			Ball Bearing Freq		310
Sample Rate	16000	-	fp(Driven Gear)	0.00	÷.	Inner Frequency	0.000	4
Sample Length	8192	~	Number of Gears	0.00	÷	Outer Frequency	0.000	*
Mechanical Properties						Roller Frequency	0.000	-
Fa(Spining) in RPM	1600	-						

Tap on Parameter Setting again to hide the parameter setting window.

3

Tap on Run to start diagnosis process. If everything is fine, the diagnosis result looks like the following:

🕤 Prognosis M	lonitoring Syst	em - PMS	APP v1.4.2														- 0	×
Project	t 🚺 Mo	nitor	Data /	Analysis	M Predicted	Analysis	👘 Rep	ort Export	60 E	nvironment Set	ting							
🗱 Paramete	er Setting 📔	Load File	🕑 Run	🥖 Clear	Data Count:60	Per Ca	Iculate C	O Accelerat	tion 🔍 Ve	locity 🔵 Envelo	pe 👖	100						
ain(g																		
Dom 5																		
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- Health Indic	ator																	
CV: 0.903					Vrms: 0.363					RMS: 0.098								
Fa: 26.667	Formation				Inner: 131.3	84				Outer: 81.9	i0			Roller: :	108.901			
	ronnacion-																	
Statue												Proje	et pro001 [jiagnosis: G40	n s Predict: A	rma (Ready)	Remaining Amou	nt 0
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If anything goes wrong, the suspect problems will be shown in Diagnosis Information field.

Prognosis Monitoring System	- PMS APP v1.4.2											- 6	ı ×
Project Monito	r Data Analysis	Predicted Ana	alysis 📑 👘 R	Report Export	anvironm Environm	nent Setting							
🔅 Parameter Setting 📄 Lo	ad File 🕞 Run 🥒 Clear	Data Count:50 🔲	Per Calculate	O Acceleration	n 🔍 Velocity 🤇	Envelope 👖							
Time Domain(g)	กลุงครามการการการการการการการการการการการการการก	90,000,00,00,00,00,00,00,00,00,00	~~~~~		สาขางการการการการการการการการการการการการการก	หมางอาจากสาวาร		~~~~~	16.49.49.49.49.49.49.49.49	q		🖗 -	
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		2000											
Health Indicator													
CV: 0.283 Fa: 26.667		Vrms: 8.364 Inner: 131.384			RMS Out	: 0.222 er: 81.950			Roller: 10	08.901			
Diagnosis Information Of Whit: 0.94 Oil Whip: 0.99 Outer Race: 0.88 Roller: 0.9	5. 5												
Status:	o 💿 🄞) <u>e</u>					Proje	ct: pro001 Di	agnosis: G400	_S Predict: An	ma (Ready) F	Remaining Ar 下午 12:2	mount: 0

Predicted Analysis

Base on the stored data to do a trend prediction of health index.

1	Vontoring System - PMS 2 2 4 5	- a ×
(ch01) T	ecom_00_CH1 🗸 🗢 Algorithm: O Polynomial 🗢 Arma Get Latest Number: 1000 🔄 Danger Value: 0.30 🔅 💿 Run 🖍 Clear	
1 7		Prediction Data
		✓ Raw ✓ Order2 ✓ Order3
0.8		✓ Order4 ✓ Order5 ✓ Order6
0.7		Danger
0.6		
0.5		
0.4		
0.3		
0.2		
0.1		
0+		A
Status:	Project: pro001 Diagnosii: G400_S Predict: Polynomial Re	maining Amount: 0 上午 11:33 2019/12/2 导 7)
1		
	Select channel first.	
2	Select the prediction algorithm. (Polynomial or Arma) This value has to be	e exactly
	the same as the Environment Setting\System\PMS Setting\Predict DLL Type	pe.
2		
9	Set the number of samples that will be used for prediction.	
4	Set the value of defect if the prediction algorithm is Polynomial. If the pr	ediction
	algorithm is Arma, you have to specify the predicted count as shown below	w:
	Prognosis Monitoring System - PMS APP v1.4.2	
	Invironment Setting 🖉 Predicted Analysis 🚮 Predicted Analysis	
	(ch01) Tecom_00_CH1 🗸 Ə Algorithm: 🗨 Polynomial O Arma Get Latest Number: 80000 🗧 Predicted Count: 80000	🗧 🕞 Run 🧪 Cl

The predicted count is the number of diagnosis. For example, if the diagnosis interval is 1 minute and the predicted count is 80,000 as shown above, the prediction will show you the trend of health index 80,000 minutes from now.



Tap on Run to start prediction.



The following is a predicted result using Polynomial algorithm.

The following is a predicted result using Arma Algorithm.



Note: To enable Arma algorithm, MATLAB Runtime 9.6 R2019a is required.

Report Export

Generate and export a report.



CV Trend	Show/Hide CV trend
RMS Trend	Show/Hide RMS trend
Vrms Trend	Show/Hide Vrms trend
Acceleration	Show/Hide Acceleration spectrum
Velocity	Show/Hide Velocity spectrum
Envelop	Show/Hide Envelop spectrum

6 Maintenance Suggestion: A suggestion for current diagnosis result. You can select from the drop menu or input manually.

Use Refresh to generate a report and use Export to export the report as a PDF file.

The following is a typical example.

(7)

🜍 Prognosis Monitoring System - PMS APP v1.3.5					٥	×
Project 📔 Monitor 🔤 Data Analysis 🚮 Predicted An	nalysis Report Export Setting					
Export Setting						
C Refresh Export						
Title:	Project001 PMS Report					
Project001 PMS Report						
Basic Infomation:	Basic Information Project001	33 70 70	Start: 2019-11-12 16:28:33 End: 2019-11-12 16:28:48			
Pidjecudi, produl, (kem]	pro601 1800	CV: 1	Normal			
(ch01) Tecom_00_CH1 ~	CV Trend	1440.0.001				
Start: 2019/11/20 16:25:27 💠						
End: 2019/11/20 18:35:30 +	0.9					
Add Files of Time	0.6					
File Add Ellabort A Claar	0.3					
162848.csv	0 2 4 6 8	10 12 14	16 18 20			
	RMS Trend					
		^				
✓ Only display abnormal diagnostic results	0.002		\sim			
Show Chart:	0.001					
V Trend Acceleration	0					
RMS Trend Velocity	0 2 4 6 8	10 12 14	16 18 20			
Vrms Trend 🗹 Envelope	Vrms Trend					
Maintenance Suggestion:	0.15			_		
Status:		Project: pro001	Diagnosis: G400_S Predict: Arma (Rea	dy) Remaini	ng Amou	nt: 0
📲 🔎 🛱 蒚 🌍 🐴 🍪 🌍			~ 🛥 d× q	下午 2019	06:44	(m)