

USER INSTUCTIONS FOR TecSonics™ PUMP WITH READER

GET THE APP

DOWNLOAD THE TecSonics™ APP FROM THE APPLE APP STORE OR GOOGLE PLAY STORE FOR <u>FREE</u>. SEARCH: TecSonics

SET-UP

- 1. Your TecSonics[™] Pump will come with the pump information and baseline preprogramed into its reader. It is ready to take readings.
- To access the reader on your pump, you need a Bluetooth capable mobile device or tablet that uses the iOS or Android operating system and has the TecSonics[™] App downloaded on to it.
- 3. The TecSonicsTM App is **free** to download.
- The mobile device or tablet only requires Bluetooth to operate the system. Wi-Fi and cellular data are <u>not</u> required to take and view readings.

OPERATION AND MAINTENANCE

- 1. We recommend taking measurements every 6 months for the first year or two, then once a year afterwards, using the instructions in this document.
- 2. As the connection between the App and the reader is based on Bluetooth Low Energy (BTLE) 5.4, and the process requires pressing a power button on the reader, readings must be taken by station personnel at the pump.
- 3. The readings are stored on the reader, so different station personnel can access the reader and its data, with different mobile devices.
- 4. The reader can hold 100 sets of readings. This equates to 75 to 100 years of data.
- 5. The password for the device is the same as Cardinal Pump's general phone number:

3303328558

If you wish to change this password, please contact your Cardinal or Unifin sales representative for instructions on how to do this. If you forget your password, the reader must be returned for processing.

- 6. The reader is an IP68 housing and has an expected battery life span of up to 10 years. Contact your Cardinal or Unifin sales representative if you require assistance in changing the battery. No other maintenance is required for the reader.
- 7. Updates to the App will be issued through the Apple App and Google Play stores like most other Apps secured from these stores.

WARRANTY

- 1. App updates will be issued through the Apple App and Google Play stores like most other Apps secured from these stores.
- 2. The reader itself has a 12-month hardware warranty, and with most issues requiring replacement rather than repair. The reader must be returned within 30 days of a reported error under this warranty.

USING THE SYSTEM

1. CONNECTING TO THE READER

a. The reader will come physically installed onto the TecSonics[™] pump.



b. Ensure the Bluetooth on your mobile device or tablet is on. Then select the TecSonics ${}^{\rm TM}$ App from the tablet.



c. When you see the starting screen for the TecSonics[™] App, tap on the "Start Scanning" button.

g	button.	
	11:55 LTE 71	
	Peripherals	
	START SCANNING	
	Bluetooth Status: On	
	⊙ Tec Sonics ™	
	Powered by Transmission Dynamics®	

d. Press the power button on the reader. The button should have a flashing green circle and the words "Waiting for connection" on the reader's display screen, indicating it is ready to pair, just a like a set of Bluetooth headphones.



e. The reader should now be listed in the App. Each reader will have a unique address code. If no devices are shown, make sure the Bluetooth Status is "On". If your Bluetooth is "Off", shut down the app, turn on your Bluetooth, and restart. When the reader is shown on the list, tap on its listing.



f. For a first-time connection, the reader will send a pairing code. Enter that in the dialog box on the app.



g. Your device should now be paired. The reader screen will be blank, and the power button will be a solid green. The App will display a log-in screen.



Log in Screen

1:29		at LTE 50
Peripherals	Login	
Choose	your permissio	n level
(Level 1) User		۲
(Level 2) Admin		
Password		
	ОК	

h. Tap on "(Level 1) User" and then enter the default password: 3303328558. Tap "OK" when done.

9:2	1						ati lite	96	
Peri	pherals		Lo	gin					
	Cho	ose y	our p	ermis	sion	level			
(Level	1) User							۲	
(Level	2) Admir	n						 	
Password 33033									
			0	K					
"3303	328558′	u							
1	2 3	4	5	6	7	8	9	0	
-	:	;	()	\$	&	@	"	
#+=	\cdot	,		?	!	'		\bigotimes	
ABC	;		sp	ace			retu	irn	
<u>:</u>							(),	
9		_	_	_	_			-	

- i. This should bring you to the DEVICE STATE tab on the screen. On this tab/screen you can see:
 - i. battery voltage for the reader,ii. temperature of the reader

 - iii. firmware version of the reader
 - iv. status of the baseline
 - v. number of measurements on the reader.

You are now connected to the reader.

1:30		.11 LTE 50
Peripherals	Home	θ
Device St	ate	
Battery Volta	ige	3.556 V
Temperature		22.6875 °C
Firmware ver	rsion	3.1.0
Measurer	nent informa	tion ^
Baseline Stat	te	Empty
Number of m	easurements	0 / 100
DEVICE STATE	PUMP DATA	MEASUREMENT

2. VIEWING THE PUMP INFORMATION

a. Tap on the PUMP DATA tab at the bottom of the screen. This screen will display information about the pump and the reader.

11.58		• 11 LTE 🔽
Peripherals	Home	Θ
Pump Data	I	
Customer Nam	e	
Unifin		
Pump Model		
31343-6x6		
Station Name		
Unifin		
Serial Number		
12345-8		
Comments		
Reader 250826		
EVICE STATE	PUMP DATA	MEASUREMENT

b. Your reader will come preprogramed with this information. On this screen you will your company name, your pump's serial number, your station name if known at time of shipment, and the pump serial number. Additionally, the serial number for the reader itself, is included in the comments.

Peripherals	Home	θ
Pump Data	3	
Customer Nan	ne	
Unifin		
Pump Model		
31343-6x6		
Station Name		
Unifin		
Serial Number		
12345-8		
Comments		
Reader 250826	5	

c. The pump serial number should match the serial number on the pump for the system to work properly. If this serial number does not match, remove and reattach the reader to the correct pump.

11:58		. II LTE 🔽
Peripherals	Home	θ
Pump Dat	a	
Customer Na	ime	
Unifin		
Pump Model		
31343-6x6		
Station Name	9	
Unifin		
Serial Numbe	er	
12345-8		
Comments		
Reader 25082	26	
DEVICE STATE	PUMP DATA	MEASUREMENT

3. VIEWING THE BASELINE

a. Your reader will come with the baselines shown on the pump nameplate already preprogramed. If you wish to view them, tap on the MEASUREMENT tab at the bottom of the screen. This tab will then display three sub-tabs above the main row of tabs. Tap on the BASELINE tab.

1:35		ILITE 49
Peripherals	Home	Θ
Measurement	informat	ion ^
Baseline State		Committed
Date & time	2025-04-1	0, 1:34:39 PM
Battery voltage		3.513 V
Temperature		22.6875 °C
COMM	IIT BASELINE	
Measur	ement is va	lid
BACK BEARING	≱ FR	ONT BEARING
Channel		Thickness (MIL)
1		169
2		170.1
3		168.7
BASELINE	TEST	169.5 HISTORICAL
DEVICE STATE PL		MEASUREMENT

b. The baseline for each bearing can be viewed by tapping on the "BACK BEARING" or "FRONT BEARING" buttons. Transducers 1 to 6 are found under "BACK BEARING", and transducers 7 to 12 are found under "FRONT BEARING".

	DLANG				
1:35		•11 LTE 🕢	1:35		IN LTE
Peripherals	Home	θ	Peripherals	Home	(
Measuren	nent informa	ition ^	Measurem	ent informa	tion ^
Baseline Stat	e	Committed	Baseline State	•	Committed
Date & time	2025-04	-10, 1:34:39 PM	Date & time	2025-04	-10, 1:34:39 PM
Battery volta	ge	3.513 V	Battery voltag	je	3.513 V
Temperature		22.6875 °C	Temperature		22.6875 °C
M	easurement is v	alid	Me	asurement is w	alid
M	easurement is v	alid	Me	asurement is w	alid
BACK BEAF	RING ® F	RONT BEARING	BACK BEAR	ING 🛛 🕸 F	RONT BEARIN
Channel		Thickness (MIL)	Channel		Thickness
1		169	7		1
2		170.1	8		1
3		168.7	9		1
4		169.5	10		1
4				TEST	HISTORIC
BASELINE	TEST	HISTORICAL	BASELINE	TEST	HISTORIC

4. TAKING MEASUREMENTS

a. Tap on the MEASUREMENT tab at the bottom of the screen. This screen will then display three measurement sub-tabs above the main row of tabs. Tap on the TEST tab.



- b. Tap on the "Measure" button. 1:35 ati LTE 49 Contract Peripherals Home θ **Measurement information** ~ Number of measurements 0 / 100 MEASURE BASELINE TEST HISTORICAL MEASUREMENT PUMP DATA DEVICE STATE
- c. The system will then measure all transducers and display the results. Additionally, the system will record and display:
 - i. The total number of measurements on reader.
 - ii. The date and time of the reading.
 - iii. The reader's battery voltage.
 - iv. The reader's temperature

5:05		•11 LTE 20
Peripherals	Home	Θ
Measuren	nent inform	ation ^
Number of m	easurements	2 / 100
Date & time	2025-0	4-11, 5:05:27 PM
Battery volta	ge	3.556 V
Temperature		23.6875 °C
	MEASURE	
Me	easurement is	valid
© BACK BEAR	ING 🔹	FRONT BEARING
Channel		Thickness (MIL)
Channel 1		Thickness (MIL)
1		169.03
1 2		169.03 170.13
1 2 3	TEST	169.03 170.13 168.74
1 2 3 4	TEST PUMP DATA	169.03 170.13 168.74 169.54



d. You can view readings for each bearing by tapping on the "BACK BEARING" or "FRONT BEARING" buttons.

5:05			5:05		uli LTE 20
Peripherals	Home	θ	Peripherals	Home	θ
Measuren	nent informat	tion ^	Measurem	ent informa	tion ^
Number of m	easurements	2 / 100	Number of me	asurements	2/100
Date & time	2025-04-	11, 5:05:27 PM	Date & time	2025-04	-11, 5:05:27 PM
Battery volta	ge	3.556 V	Battery voltag	e	3.556 V
Temperature		23.6875 °C	Temperature		23.6875 °C
	MEASURE			MEASURE	
Me	asurement is va	lid	Me	asurem ent is va	alid
BACK BEAR		ONT BEARING	BACK BEAR	NG 🕸 FI	RONT BEARING
Channel		Thickness (MIL)	Channel		Thickness (MIL)
			-		168.31
1		169.03	7		
2		169.03	8		169.8
			-		169.8
2		170.13	8		
2 3	TEST	170.13 168.74	8	TEST	168.5

4. VIEW AND EXPORT THE DATA

a. Tap on the MEASUREMENT tab at the bottom of the screen. This screen will then display three measurement sub-tabs above the main tabs. Tap on the HISTORIAL tab. The process of uploading historical data from the reader to the App could take a few moments.

Loading historical measurements (33.33%)	1:36		ati ute 🛙	8
	Peripherals	Home	ů 0	
	Loading his	torical measurement	ts (33.33%)	
	BASELINE	TEST (HISTORICA	<
EVICE STATE PUMP DATA MEASUREMENT	DEVICE STATE	PUMP DATA	MEASUREMEI	

b. When the data is loaded, the data for transducer 1 will be displayed.

1	:36								.11	LTE 🛛	8	
Peripherals					Home					ф Ө		
	Channel Selector											
1	2	3	4	5	6	7	8	9	10	11	12	
Index Date Thickness (MIL) Wear (M							/IL)					
	2025-04-10, 1:34:39 PM							169		Basel	ine	
1		2025- 1:35:4),		169			0			
2	2 2025-04-10, 1:36:20 PM						16	9.01	0.01		.01	
3	3 2025-04-10, 1:36:22 PM							169	0			

BASELINE	TEST	HISTORICAL
DAGELINE	1201	HISTORICAL
DEVICE STATE	PUMP DATA	MEASUREMENT

c. The baseline reference will be displayed in a yellow bar, with the subsequent readings (or thickness) displayed below. Each reading will have the date and time it was taken, and its variance to the baseline in mils. This will enable you to quickly scan for any wear trends. Variances within +/- 0.3 mils are within the accuracy range of the system and do **not** indicate any wear on the bearing.

1:36				. II LTE 4 3						
Peripherals			Ho	Home			ф Ө			
Cha				annel	Sele	ctor				
1 2	3	4	5	6	7	8	9	10	11	12
Index [Date				Thick	ness	(MIL)	W	'ear (N	AIL)
	2025- 1:34:3						169		Basel	line
	2025- 1:35:4		D,				169			0
2	2025- 1:36:2	04-10 0 PM	D,			16	9.01		C	0.01
	2025- 1:36:2		О,				169			0
BASE	ELINE			TE	ST		H	ніято	RICA	ιL
DEVICE	STAT	TE	-	PUMF	DAT	A	ME	ASU	REME	NT
							_			

d. Each transducer can be viewed by tapping on its number in the Channel Selector at the top of the screen.

op.			~~.									
1:3	6			•11 LTE (48)								
< Per	Peripherals Hom			me			₫	0				
			Cha	channel Selector								
1 2	3	4	5	6	7	8	9	10	11	12		
Index	Date				Thick	ness	(MIL)	W	/ear (N	11L)		
	2025- 1:34:3					1	68.5		Basel	ine		
1	2025- 1:35:4		0,			1	68.5			0		
2	2025-04-10, 1:36:20 PM				168.52			0.02		.02		
3	2025- 1:36:2					16	8.49	-0.01				

e. To export the data as a *.csv file, tap on the

icon in the top right of the screen.

1::	36								LTE	8	
< Pe	riphera		Home				(±) 0				
Channel Selector											
1 3	2 3	4	5	6	7	8	9	10	11	12	
Index	Date				Thick	(ness (MIL)	W	/ear (N	/IL)	
	2025- 1:34:3						169		Basel	ine	
1	2025- 1:35:4		0,				0				
2	2025 1:36:2					16	0.01				
3	2025 1:36:2				169	0					

f. Your mobile device's file sharing options will be displayed at the bottom of the screen. You can then email the file or save the file on the mobile device.

1:37		.11 LTE 43)									
< Peripheral	s Home	ф Ө									
1 2 3	4 5 6 7 8 9	0 10 11 12									
Index Date	.) Wear (MIL)										
2025-0 1:34:39	9 Baseline										
	1 2025-04-10, 168.9 1:35:41PM 168.9										
	2 2025-04-10, 168.9										
3 2025-0		0									
	basic-export-2025-04-10_13/37/04 Text Document - 2 KB										
AirDrop	Messages Mail	Notes Rer									
Сору		ď									
New Quic	New Quick Note										
Save to Fi											
Edge		C									
Authentic	ator	0									

g. The data file will include all the information from the PUMP DATA tab, the baseline, and all historical readings.

5. POWERING DOWN THE READER

- a. The reader will power down itself within 3 minutes of inactivity within the App, or when not connected to the App.
- b. The reader can also be shut down manually. Tap on the Θ icon in the top right corner of the screen.

1:3	6			.11	LTE 🕻	8				
< Per	iphera	als		Home					Θ	$\overline{)}$
Channel Selector										
1 2	3	4	5	6	7	8	9	10	11	12
Index Date Thickness (MIL) Wear (MIL								AIL)		
	2025- 1:34:3			10	58.9		Basel	ine		
1	2025- 1:35:4		0,			10	58.9			0
2	2025- 1:36:2			10	68.9			0		
3 2025-04-10, 1:36:22 PM						16	68.9			0

c. Tap on "Power management".

1:37			.11	LTE 4 🕄			
Peripherals	н	ome	₾	θ			
	Chann	Change Pas	sword				
1 2 3 4	5 6	Device firmware update					
Index Date) Power management					
2025-04-10 1:34:39 PM),	108	.9 t	aseiné			
1 2025-04-10 1:35:41PM),	168	.9	0			
2 2025-04-10 1:36:20 PM),	168	.9	0			
3 2025-04-10 1:36:22 PM),	168	.9	0			





e. Close the App on your mobile device.

6. ADDITIONAL INFORMAITON AND SUPPORT

- a. If you require additional information or support, contact your Cardinal or Unifin sales representative.
- b. You can also reach out using the information listed below.



U4.10.1.3-1 R1 TecSonics™ App – User Instructions for TecSonics™ Pump with Reader

Rev	Details	By	Date
1	Updated App Icon	JWW	4/17/2025
0	Original Issue	JWW	4/12/2025