

Tire Pressure Monitoring System

AMP-10s / AMP-10f

USER'S GUIDE.



Manufacturing

TIRE PRESSURE MONITORING SYSTEM

The Peace of Mind for Motoring

KEY FEATURES

Fits all type of rims
4 or 5 Wheel monitor
Reverse visual LCD
Audible Alarm
Monitor at high speed
Easy Installation



**Warning,
Caution**

Fitting and commissioning to be carried out by qualified personnel only in accordance with the operating instructions.

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Product usage

- ABEX Tire Pressure Monitoring System is a safety device that measure and display tires pressure and temperature. The system will alert drivers by visual and audio, when irrelevant of pressure and temperature are detected.
- The device is suitable for use in passenger cars, 4WD and light trucks that use maximum tire pressure up to 78Psi (or 538Kpa).

Reacting to alerts

- When an alert is appear, reduce vehicle speed gradually and proceed to a safe stopping location for necessary inspection.
- Low pressure alert indicate tire pressure has dropped to pre-determine setting value. Inflation is necessary.
- Rapid deflation alert is normally activated when puncture or pressure reduce beyond safety setting value, that requires for further action.
- High temperature alert could happen due to severe abrasion due to braking, vehicle overloaded or massive heat transfer by other parts of vehicles that need to be rectified accordingly.
- It is the Users responsibility to react promptly and appropriately during the alerts.

Use of Chemicals

- Temporary resealing and re-inflation products that contains sealant or propellant chemicals inside tires may adversely affect the functionality of the sensors unit.

Periodical Maintenance

- Confirm the sensor is functioning for all tires by monitoring the pressure and temperature updates in the display.

REGULATIONS**UNITED STATES FEDERAL COMMUNICATIONS COMMISSION (FCC)**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Caution: Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine under inflation by visual inspection.

For convenience, purchase ABEX tire pressure monitoring system to keep in your vehicle.

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Under inflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of failure, you should maintain proper tire pressure.

Definition

ABEX Tire Pressure Monitoring System is a safety device that measure & display tire pressure and temperature. The system will alert drivers by visual and audio, when irrelevant of pressure and temperature are detected.

Factory setting.

Initial pressure and temperature setting from factory is listed as below table.

Setting	Low	High
Pressure	170 Kpa 25 Psi	300 Kpa 44 Psi
Temperature	0°C 32°F	80°C 176°F

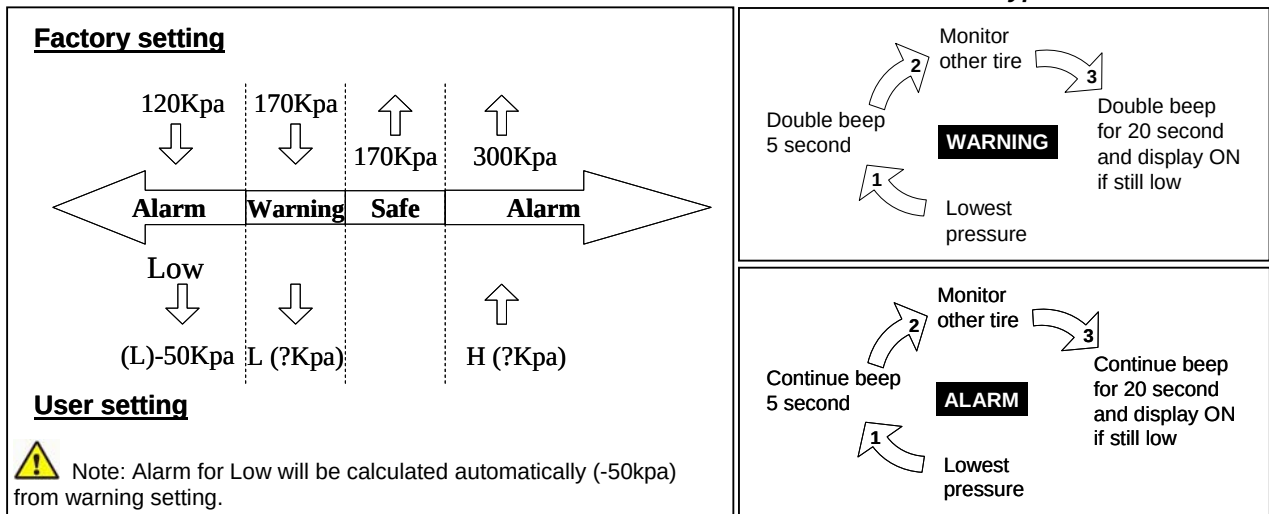


Note: Recommended tire inflation pressure information placards are permanently attached to the vehicle door edge, door post, glove-box door, or inside of the trunk lid. You can also find the recommended tire pressure for your vehicle in the vehicle owner's manual.

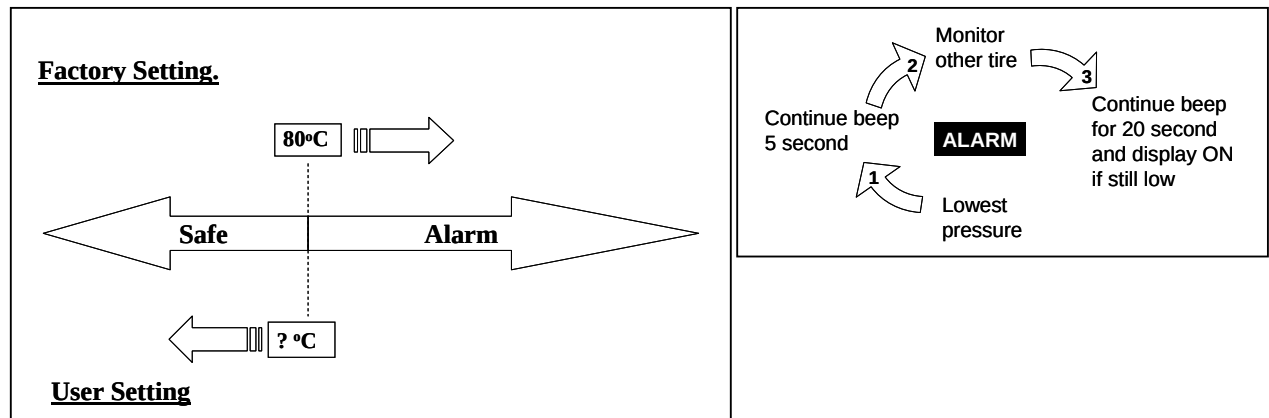
Optimum pressure setting should be adjusted accordingly/suitable to the vehicle permissible level.

1. Pressure alerts.

Below is the alert type for factory setting. User can follow factory setting tolerance as a guide.



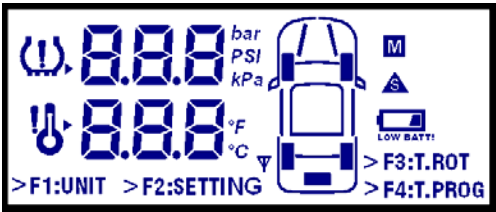
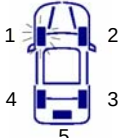
2. Temperature alerts.



3. Packing list

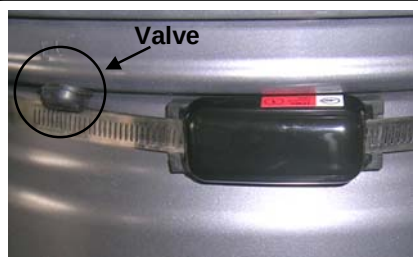
No.	Description	Model	
		AMP-10s	AMP-10f
1	DISPLAY UNIT WITH CABLE	1	1
2	RECEIVER UNIT	1	1
3	SENSOR UNIT	4	5
4	SENSOR METAL CLAMP	4	5
5	SENSOR RUBBER	4	5
6	NUMBERING TAGS (Red, Yellow, Blue, Green)	4	4
7	POWER CABLE WITH FUSE	1	1
8	USER'S GUIDE	1	1

Display Unit**Receiver Unit****Sensor Unit**

Display unit	
	
Icons	Meaning
	Pressure alert
	Temperature alert
bar PSI kPa	Pressure reading in Bar Pressure reading in Pound force per square inch Pressure reading in Kilopascal
°F °C	Temperature reading in Fahrenheit. Temperature reading in Celsius.
	Sensor transmitting indicator
	1. Front left tire 2. Front right tire 3. Rear right tire 4. Rear left tire 5. Spare tire
	Display in main menu / Sensor malfunction.
	Setting mode / Sensor alert.
	Low battery indicator
>F1:UNIT	Selector to choose pressure & temperature unit
>F2:SETTING	Enable to change threshold value of pressure and temperature.
>F3:T.ROT	Exchange sensor position from the initial ID programmed location.
>F4:T.PROG	Program new sensor ID code.



Slide through Metal clamp into sensor slot.



Attach Metal clamp band with sensor and rubber base in the smallest circumference of rim & position sensor nearest to the valve area.



Align fastener position, opposite to the sensor (180°) & mark the cutting point about 30mm extra before cutting.



Cut excess metal clamp & tighten the fastener using flat type screw drivers. (Torque 5.5N-m, 0.6kgf-m or 49lbf-in)



Fastener should be properly tightened to avoid loose.



Make sure tire is inserted from opposite side of the sensor. Slowly insert tire to avoid knocking during installation.



Be cautious during tire installation. Tire bead should not stress on the sensor.



Make sure colors of numbering tag and sensor label is followed identically.



Position tire loosener metal plate opposite side of the sensor.
Make sure the method is practice on the reverse side.



Slide through metal bar opposite side of the sensor.



Lift out tire from the sensor position.
Make sure tire bead does not stress on the sensor.



Be cautious during tire de-installation.
Tire bead should not stress on the sensor.



Note: Re-confirm sensor position & metal clamp to be in good condition before re-installation.



Find a suitable position with space allowance at the corners. This to ensure, display is adhered well and pressing of the button can be easily done.



Clean the surface with clothe to remove dust and oily surface.



Dust and oil free surface will enhance the adhesive of the glue.



Peel off the double side tape cover.



Aim and adhered display unit at the position chosen earlier. Apply small amount of force to achieve good adhesion to the dashboard surface.

For the 1ST activation, system will turn ON all LCD icon, buzzer and backlight. This is for LCD and buzzer diagnostic.

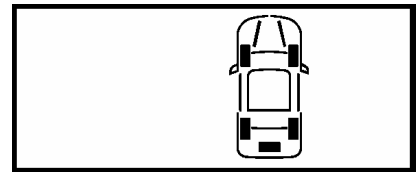
Normal power ON

1. The system will search for the lowest pressure. If all tire pressure is in-between the threshold setting, than individual tire pressure will be shown starting from clockwise direction.



Note: Spare tire (5) will only appear if activated. Refer to spare tire activation manual at pg 16.

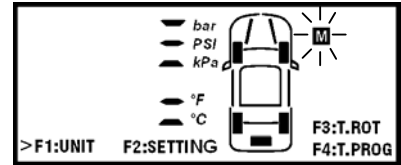
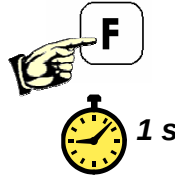
2. After completion showing individual pressure and temperature. The monitor will automatically return back to standby mode (monitoring mode).
3. If the alert occurs, the system will automatically turn on and activate the display with buzzer sound.
(Type of alarm is explained in page 4).



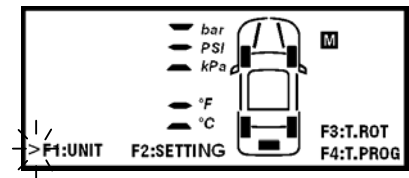
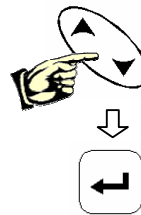
Monitoring mode

1. ENTERING MAIN MENU**Step 1**

1. Press button 'F' for 1 second until the setting menu appears.
The symbol 'M' indicating the display is in the main menu.

**Step 2**

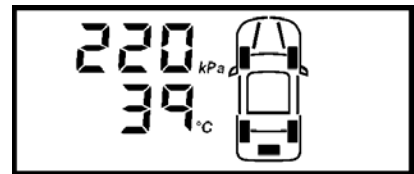
1. Use Up or Down arrow button to scroll to the desired function.
2. The arrow symbol (>) is indicating the selected function.
3. Press enter key (↵) to proceed with the selected function setting.



Function key	Description
F1: UNIT	Unit selection for pressure and temperature. Available selection in :- Pressure = Bar, Psi & Kpa Temperature = Fahrenheit & Celsius.
F2: SETTING	Setting threshold value for alarm pressure high & low and temperature high.
F3: T.ROT	Function to change sensor location if tire rotated. (Rotating tires from front to back and from side to side can reduce irregular wear as recommended period).
F4: T.PROG	Function to program new sensor unit into the display unit for defective sensor replacement.

2. RETURNED TO MONITORING MODE**Step 1**

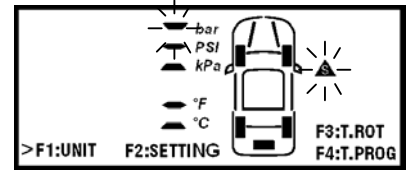
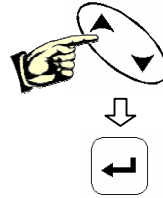
1. Press 'F' button for 1 second during main menu mode. The display will return back to monitoring mode.



3. PRESSURE AND TEMPERATURE UNIT SELECTION (F1: UNIT)**STEP 1**

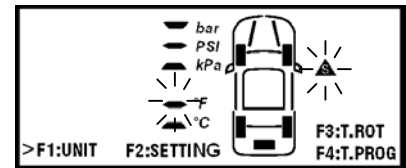
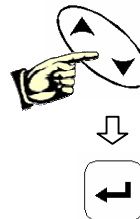
To set the desired units for **pressure** refer to following step.

1. Select function F1: UNIT.
The symbol 'S' indicating the setting is allow to be changed.
2. The blinking bar indicating current selected measurement unit for pressure. To change, press UP or DOWN arrow key for desired unit.
3. To confirm the selected measurement unit, press ENTER.
4. Setting will automatically go to temperature unit measurement.
(Refer to step 2).

**STEP 2**

To set the desired units for **temperature** refer to following step.

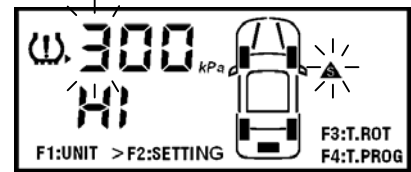
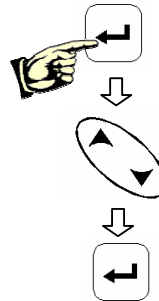
5. The blinking bar indicating current selected measurement unit for temperature. To change, press UP or DOWN arrow key to select desired unit.
6. To confirm the selected measurement unit press ENTER and the display will automatically return back to main menu.



4. PRESSURE AND TEMPERATURE THRESHOLD SETTING (F2: SETTING)**STEP 1**

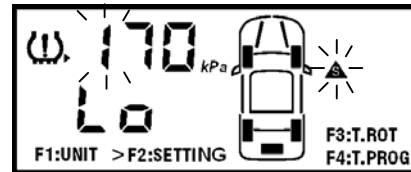
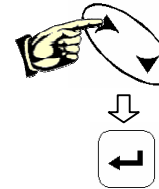
To change factory threshold setting for **high pressure** refer to following step

1. Select function >F2: SETTING. ('S' symbol will appear)
2. To make changes on threshold setting, press ENTER key.
3. The 1st digit will start blinking, press UP or DOWN key to change the value.
4. Press ENTER to confirm the changes. Continue for next digit.
5. After completion for the 3rd digit, the display will show threshold setting for low pressure.

**STEP 2**

To change factory threshold setting for **Low pressure**.

1. The 1st digit will start blinking.
2. Press UP or Down key to change the value for Low pressure setting.
3. Press ENTER to confirm the changes. Continue for next digit.
After completion, the display will show threshold setting for high temperature.



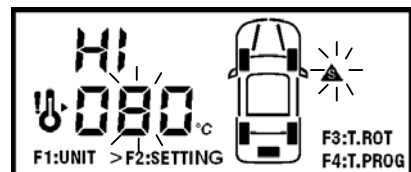
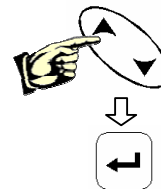
⚠ (Note: Pressure setting only can be change in Kpa unit).

⚠ (Note: Low pressure setting is advisable less by 20% from optimum pressure). User may reduce the tolerance if found not suitable.

STEP 3

To change factory threshold setting for **High Temperature**.

1. The 2nd digit will start blinking.
2. Press UP or Down key to change high temperature threshold setting.
3. Press ENTER to confirm the changes. Continue for next digit.
After complete, the display will automatically return back to main menu.

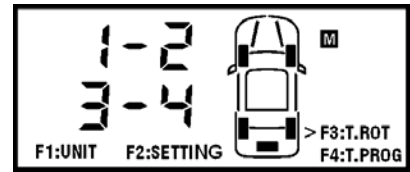


⚠ (Note: Temperature setting only can be change in Celsius unit).

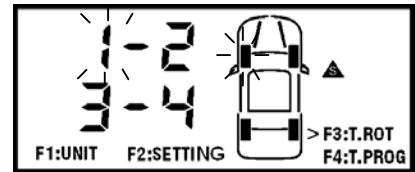
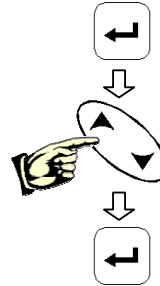
5. TIRE ROTATION (F3: T.ROT)**STEP 1**

When tire rotation need to be perform, make sure sensor number in the display is change accordingly.

1. Go to function >F3: T.ROT.

**STEP 2**

1. Press enter key (↵) ('S' symbol will appear).
2. The number & tire icon will blink correspondingly.
3. Press UP or DOWN key to make necessary changes according to sensor tag.
4. Press ENTER to confirm changes.
5. Proceed to other tire by following 3 & 4.
6. After completion the display will automatically return back to main menu.

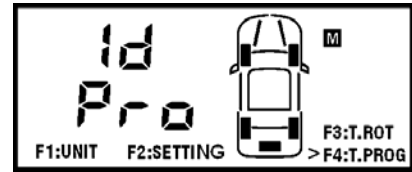


Note: Spare tire (5) will only appear if activated. Refer to spare tire activation manual at pg 16.

6. SENSOR PROGRAMMING (F4: T.PROG)**STEP 1**

Program sensor code numbers to the system, in case of upgrading to monitor spare tire or replacing sensors.

1. Go to function >F4: T.PROG

**STEP 2**

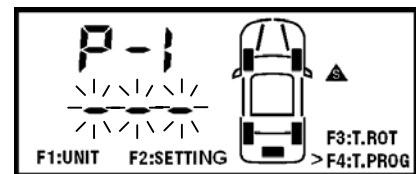
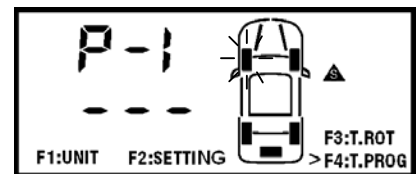
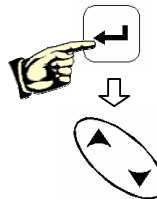
2. Press ENTER button to start programming. ('S' symbol will appear).
The front left tire will start blink by default.

3. Press UP or Down button to select desired tire for programming.

4. Press ENTER button to start programming.
Three dash line will start to blink and the system is ready to accept new sensor code numbers.

5. Inflate or deflate the selected tire more than 20Kpa.

6. Wait until sensor code number is programmed.
After save successfully the buzzer will sound for 5 second and three dash line will change to '888' as **photo A**.



Less 20Kpa
or
More 20Kpa

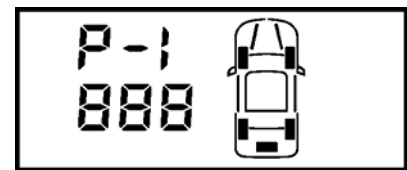
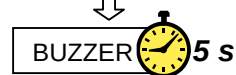


Photo A



Note: Spare tire (5) programming can be made if activated. Refer to spare tire activation manual at pg 16.



Note: Make sure pressure is reduce gradually more than 20Kpa during programming.



Note: If un-able to program, move vehicle to other location and follow the programming steps.

1. SPARE TIRE ACTIVATION

STEP 1

To activate and de-activate spare tire refer to following step.



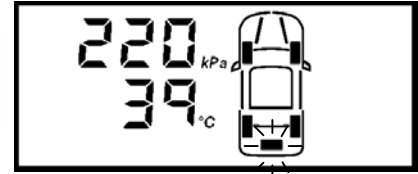
Note: Spare tire activation only can be done in monitoring mode.

Activate

Press UP button and hold for 8 second/beep sound until spare tire icon activated.

De-activate

Press UP button and hold for 8 second/beep sound until spare tire icon de-activated.



2. ON-OFF DISPLAY

STEP 1

To OFF and ON the display refer to following step.



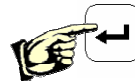
Note: OFF and ON display only can be done in monitoring mode.

OFF

Press ENTER button and hold for 3 second until display OFF.

ON

Press ENTER button and hold for 3 second until display ON.



<i>Faults</i>	<i>Possible cause</i>	<i>Remedy</i>
No display	Power connection loose or fuse blow.	Make sure wires are properly secured & confirm the fuse in good condition.
	Connection swapped (incorrect wiring)	Make sure the polarity is correct as: - Red for permanent 12V - Yellow for Acc. 12V. - Black for grounding.
	Power is switched off.	Press ENTER button for 3 second.
Incomplete display	Defective display	Return to dealer.
Cannot program sensor code number	Signal interference	Move vehicle to other location and re-program.
	Pressure is not reduced properly.	Make sure pressure is reduce gradually more than 20Kpa / release air for 10 second or more.
Frequent alert	Threshold setting comparator is close to optimum tire pressure.	Enter setting mode and reduce low pressure setting.
Reading not updated immediately after Power Key ON.	Connection swapped (incorrect wiring).	Make sure the polarity is correct. - Red for permanent 12V - Yellow for 12V Acc.
Wrong pressure value	Tire is not assigned correctly	Make sure correct tire is assigned in tire rotation mode. (Refer to page 14 for setting).

Display Unit		
Mounting position	As desired, preferably on top of dashboard with flat surface.	
Operating Temperature Range	-40°C to + 85°C	
Weight	45 gram	
Size (LxWxH)	100mm x 48mm x 40mm	
Monitored Temperature Range	-40°C ~ 125°C ± 6°C (-40°F ~ 257°F)	
Monitored Pressure Range	0 ~ 535 Kpa (Accuracy: ± 10 Kpa) 0 ~ 78 Psi (Accuracy: ± 1.5 Psi)	
Receiver Unit		
Permanent power supply	9 ~ 15 VDC (max 18VDC)	
Acc. power supply	Acc. 9 ~ 15 V DC	
Idling current	140mA @ 12V DC.	
Operating Temperature Range	-40°C to + 85°C	
Weight	55 gram	
Size (LxWxH)	90mm x 27mm x 78mm	
Receiving Frequency	433.92 MHz	
Sensor / Transmitter Unit		
Operating Temperature Range	-40°C to + 125°C	
Operating Humidity	100% non-condensing	
Weight	35 gram	
Size (LxWxH)	70 mm x 36 mm x 20 mm	
Battery Life	7 years	
Transmitting Frequency	433.92 MHz	
Activation	Pressure	

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