

Atac 2050 Specifications

Single Unit (7 Amps RMS Output Capacity)

The **ATAC**, Active Tuning Amplitude Controller, is a flexible, all digital controller designed to maximize the performance of vibratory feeders. In its standard mode of operation the **ATAC** controller will maintain a feeder's vibration intensity at any value specified by the user (Amplitude Control). In addition, the controller will continually search for the natural frequency of the feeder (resonance) and excite it at that frequency (Active Tuning). Together, Active Tuning and Amplitude Control of the **ATAC** yield:

- Consistent feeder performance over a wide range of loading conditions.
- Freedom to build and operate a feeder with any natural frequency from 40 Hz to 160 Hz.
- Feeders can operate from 50 Hz (Europe) or 60 Hz (North America) supply power without modifying the feeder springs or mass.
- Minimum coil current, Minimum coil heating, Minimum supply current, Minimum power consumption, Power factor correction.
- Fault tolerance (feeders with broken springs can still operate, eliminating the need for unscheduled maintenance).
- Many feeders can be placed on the same electrical circuit without fear of circuit overload.

The **ATAC** Controller is a true closed loop control system. There are two components to the **ATAC** Control System, the Motion Sensor and the **ATAC** Controller.

- **Mode 1:** Frequency Sweep Active Tuning Amplitude Control.

In this mode the **Atac** will perform a frequency sweep after power up. The sweep begins at **160Hz**, and will end at **40 Hz**. Upon completion of the frequency sweep the **Atac** will go into “*normal operation*” at the drive frequency. During “*normal operation*” the **Atac** will automatically adjust the output voltage to maintain the vibration intensity at the desired Set Point (**Amplitude Control**), and continuously adjust the output drive frequency to keep the feeder operation at resonance for maximum efficiency (**Active Tuning**).

- **Mode 2:** Fixed Frequency, Active Tuning Amplitude Control.

In this mode the **Atac** will go into “*normal operation*” at the drive frequency selected during the frequency control adjustment. During operation the **Atac** will automatically adjust the output voltage to maintain the vibration intensity at the desired Set Point (**Amplitude Control**) and continuously adjust the output drive frequency to keep the feeder operating at the selected drive frequency (**Active Tuning**).

- **Mode 3:** Fixed Frequency Amplitude Control.

In this mode the **Atac** will go into “*normal operation*” at the drive frequency selected during the frequency control adjustment. During operation Set Point (**Amplitude Control**) is performed but there is no adjustment made to drive frequency. (**Active Tuning**) is turned off.

- **Frequency Sweep Power Level:** This adjustment only applies when the **Atac** is set-up to run in Mode 1.

This allows the frequency sweep power level to be adjusted to accommodate smaller and larger feeder bowls to accurately detect the resonance of the feeder during the **Mode 1** frequency sweep function.

- **Full Scale Intensity Adjust:** This adjustment made with Pot 2, alters the gain on the motion sensor, and thus changes the value of the full-scale vibration intensity as set via the Set Point dial of the unit.

- **Loop Gain:** The loop gain is an adjustment that results in a tradeoff between speed of response (*to a step change of the Set Point, or sudden feeder loading*) and control stability.

- **Universal Input Enable for Operate/Hold:** The Universal Input allows remote operation of the **Operate/Hold** feature. Any voltage AC or DC, from 5 volts RMS minimum to 120 volts RMS maximum applied to the input will put the unit into **Operate**. A zero volt input will place the unit into **Hold**.

- **Operate / Hold Relay Output:** This feature is useful for communicating the operational status of the unit to another **Atac**, a PLC, or any other monitoring device. The relay output is rated to switch between 0 and 250 volts RMS, AC or DC, with a maximum of 1 Amp.

- **Display Select:** This switch selects between displaying frequency or speed.

- **Soft Start:** Many vibratory feeders will “surge” on restart (*going from hold to operate*). The **Soft Start** feature eliminates this surging by slowly ramping the power up to the specified Set Point over a period of one second.