



ATevo Series Battery Charger

DYNAMIC CURRENT LIMIT FEATURE

OVERVIEW

ATevo Series battery chargers are designed to operate at 110% current rating (Adc) at 50 °C (122 °F) ambient temperature. The Dynamic Current Limit feature prevents rectifier components from failing in a high temperature environment. The ATevo *continuously* monitors rectifier temperature. When Dynamic Current Limit is enabled, the ATevo will *de-rate* output current to maintain rectifier junction temperature to within the rated maximum.

The Dynamic Current Limit feature was introduced in ATevo firmware version **2.7.0**, for single-phase models, rated 50Adc or less.

DYNAMIC CURRENT LIMIT...

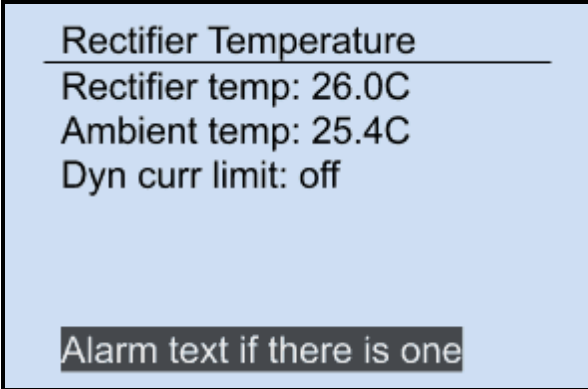
- is disabled by default. It can be enabled/disabled via the following buttons and screens:
MENU / Advanced Settings / Dyn Cur Limit Enable [on/off]
- de-rates output based on rectifier temperature only. Ambient temperature greater than 50 °C does not in itself activate Dynamic Current Limit. ATevo chargers are designed to withstand full load at 50 °C ambient. An ATevo in an environment with ambient temperature greater than 50 °C, supplying a light load, may *not* activate Dynamic Current Limit.
- becomes active when the rectifier temperature is greater than 90% of maximum rated rectifier junction temperature. *
 - It begins at this lower level to prevent temperature overshoot.
 - The rate and amount of derating depends on the rate of rectifier temperature rise.
 - The ATevo will regulate current output to maintain safe rectifier temperature for as long as the high temperature condition exists, and there is current demand by the load.

* **NOTICE** The maximum rated junction temperature varies, depending on the device in each ATevo model. The lowest rating of any device used is 120 °C.
- is recorded in the ATevo **data log**, when it becomes active and when it is cleared.
- turns the *HindleHealth* **red** LED *on*.
- when active, is featured on the ATevo front panel display, as well as in the GUI alarms list.
- does not activate the common alarm by default. However, it *can* be set to activate the common alarm via the following buttons and screens:
MENU / Common Alarm / Dyn Cur Limit
- on/off control, active/inactive status, as well as rectifier temperature are all available over DNP3 and Modbus ATevo communications.
- status is displayed in the Rectifier Temperature status display. Status includes:
 - rectifier temperature
 - ambient temperature
 - Dynamic Current Limit enabled (*on*), or disabled (*off*)
 - Dynamic Current Limit active (output *is* de-rated), or inactive (output is *not* de-rated)
 - de-rated output current (Adc) of the ATevo (if Dynamic Current Limit is active)
 - percent of maximum output current is de-rated (if Dynamic Current Limit is active)
- maximum derating applied is 100%. That is, output could be *entirely* disabled if the rectifier temperature is higher than maximum rating.
- will *never* activate if rectifier temperature sensor failure is detected.
- is *not* the same as "rectifier over temp alarm". Rectifier overtemp is independent of dynamic current limit, and becomes active when temperature rises above 90% of rectifier junction maximum rating.

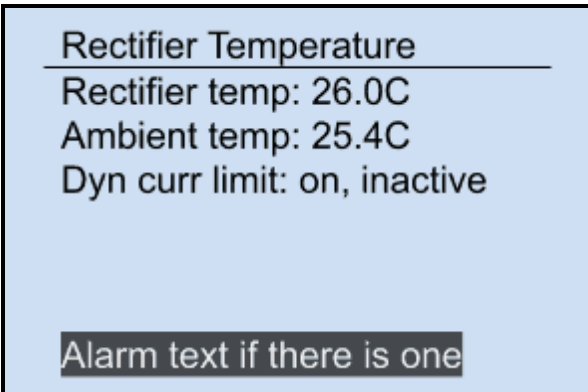
RECTIFIER TEMPERATURE STATUS DISPLAY

- 1) Access the Rectifier Temperature status display, via the following buttons and screens:
DISPLAY MODE / **Rectifier Temperature** / **Dyn Cur Limit**
- 2) Otherwise, cycle through the status screens using the ◀ (left) or ▶ (right) arrow keys, from the top display, until you reach Rectifier Temperature.

Rectifier temperature display indicates rectifier and ambient temperature reading as well as dynamic current limit on/off status.



Status of whether it is inactive/active is also shown when it is on.



The current output in Amperes (A_{dc}), as well as the amount that current is de-rated, is displayed when dynamic current limit is active.

