

# DTC-100

## Introduction

The DTC-100 is a programmable controller for antenna rotators. It can interface with a variety of Yaesu, HyGain, and other brand rotators that use 24Vdc or 24Vac motors. The user interface is a full color 5" touch screen display. Antenna rotation can be controlled with a single touch of the LCD, or via standard protocol RS232 (TTL) from various computer programs.

## Power-up Screen

Upon initially applying power a "Sign-On" screen will appear. The user has the option to calibrate "CAL", configure "CFG", or jump to the main user screen.





## Rear Panel Connections

DTC-100 uses a standard IEC 320 connector block with fuse. A 6 foot 110VAC cord is included with all US shipments.

A pluggable terminal block on the rear panel allows connections for either Yaesu or HyGain rotators. A mating connector has been supplied to facilitate wiring. Be sure to follow the Connection diagram before proceeding. *Optional Terminal Block Adapter cables are available for those not wishing to cut the connector off existing cable.*

Connections to programs such as PST Rotator and HRD are made using an optional USB to RS232TTL adapter (FTDI chip). This generic adapter can be purchased directly from AALogic, or other supply vendors.

- USB-A to 3.5mm audio plug, TXD Tip, RXD Ring, Sleeve GND

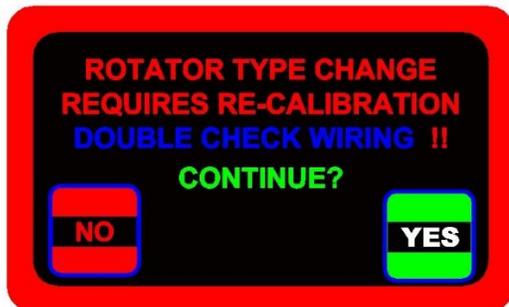
## Calibrate

The calibrate screen can be accessed at “Power-UP” or from the CFG screen. This step should only be necessary during initial setup.



- LCD Screen Brightness when dimmed
  - Press “SEL” below the vertical bar graph, then UP/DWN arrows to set desired brightness after dimmer time interval has elapsed.
- LCD Timer
  - Press “SEL” below the “DIM TIMER” to set the interval after last keypress until LCD brightness changes to value set under “DIM LEVEL”. Setting a level of “0” disables the timer.
- Rotator Type
  - Yaesu (24Vdc motors, G-450, G-800, G1000, and G-2800)
  - HyGain (24Vac motors, HAM IV, T2X, and most other CDE models)
- Antenna Offset
  - The DTC-100 offset is the difference between the antenna position and North when the rotator is at the FULL CCW position. Initiate an Auto calibration process by pressing the CAL button. When the status indicates FULL CCW complete, abort the process by pressing EXIT. Using a mechanical compass, or a cell phone APP, determine the position of the antenna. Wherever the antenna position is at FULL CCW will be the number that should be entered as the calibration offset. If the antenna is pointing at ZERO degrees, then there is NO offset and simply pressing the “N” will set zero degrees. If at FULL CCW the antenna is pointing 340 degrees, press “W” and increment until 340 is displayed as the offset. Likewise, if the antenna is at 180 degrees, the offset is 180 degrees.
  - After the offset has been determined and entered, restart the calibration process. Once calibration has been completed, subsequent offset modification can be made without re-calibrating by changing the offset value and pressing “SAVE”.
- CAL
  - The “CAL” button will initiate a full CCW, then full CW rotation of the rotator (CCW/CW to mechanical stop). This process measures the motor sensor and corrects for discrepancies between models. The highlighted “CYAN” area reports the progress during this procedure.

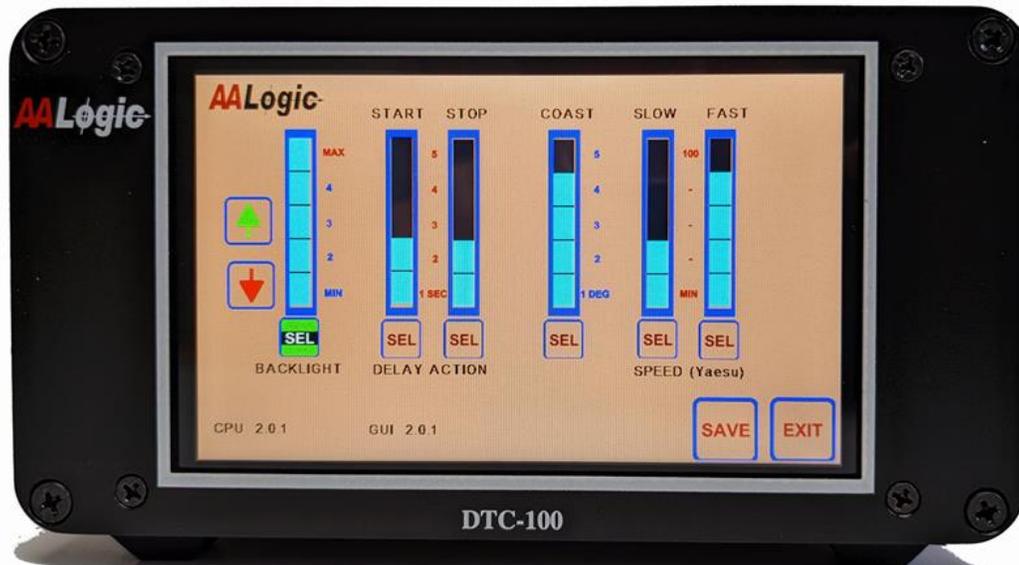
- If the calibration was successful the user is instructed to press “SAVE” to store these into non-volatile memory (only performed during initial setup). It should be noted that once calibrated, the user has the option to change the “offset” without performing a complete calibration again. Set the new offset and press “SAVE” will only update that setting.



- Rotator Type POP-UP window
  - This screen is a warning which is only visible when trying to change rotator types. This reminds the user to double check wiring and confirm motor type before proceeding. Selecting the incorrect setting could possibly damage your rotator. DO NOT EXIT or SAVE settings on CFG screen unless certain of rotator type and correct connections.

## Configure

- The user configuration screen can be accessed from the “Power-UP” or “MAIN” screen.

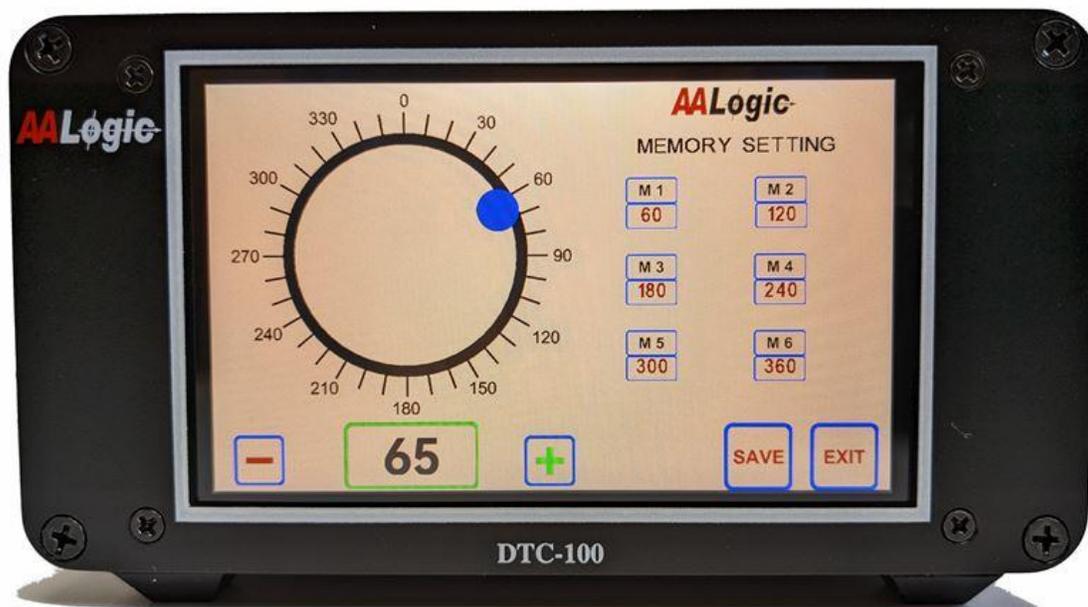


- LCD Screen Brightness
  - Press “SEL” below the vertical bar graph, then UP/DWN arrows to set desired brightness during the active time of the Controller. (See CAL screen for LCD dimmer functions)
- Start/Stop Delay Time
  - Press “SEL” to activate. These controls provided a means to control when motor power is applied after release of the brake, and how long after motor power is removed before brake is again engaged.

- COAST
  - Due to momentum of the antenna in certain cases it is desired to release motor power prior to reaching the target direction. As an example: If the target is set to 90 degrees, the motor power will be terminated before reaching target by this setting.
- YAESU Speed Control
  - Yaesu motors do not have separate brake control line. The DTC-100 will slowly begin rotation before ramping up to full speed. Likewise, when approaching target direction the motor speed will be reduced. The settings SLOW/FAST selects the voltage level sent to the motor during Start/Run and Run/Stop periods.

## Memory

The 6 memory slots can be accessed by pressing the “MEM” button on the main screen.



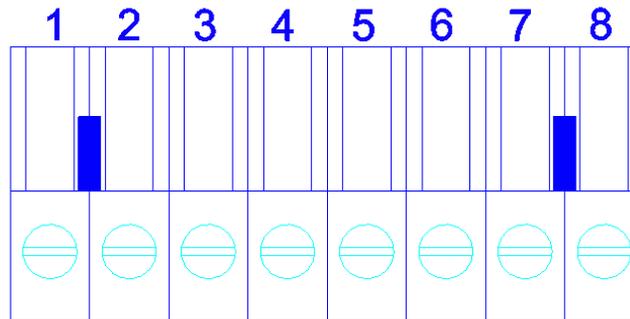
- Left Circular Dial
  - Analog Indicator for desired antenna azimuth.
    - Touching the steering DOT will allow coarse setting of azimuth
    - (+)/(-) buttons can be used for fine adjust.
- Large numeric indication of desired memory input
- M1-M6 Copies azimuth indication into associated memory location.
- SAVE - saves all memory slots in non-volatile memory
- EXIT - Exits **without** saving in permanent memory

## Main User Screen



- Single Touch Circular Dial
  - Large Analog Indicator displays antenna azimuth.
    - Touching the circle spokes at the desired destination initiates rotation
  - Large numeric indicators display destination input and antenna position
  - Press and hold CCW / CW for manual operation.
- STOP
  - Begins the halt sequence as set on CFG screen.
- CFG
  - Shortcut to the configuration screen.
- MEM
  - Shortcut to memory setup screen
- Memory Keys
  - Shortcut to preset memory location as defined on the memory setup screen
  - Numeric indications show memorized settings
  - Single touch action. Automatically starts rotation.
- RMT Indicator
  - Illuminated during rotation initiated by PC command. If the PC application used is set to quarry the DTC for azimuth changes this LED will flash to indicator active connection.
- OVR
  - Indicates rotation beyond 360 degree reference point

## REAR PANEL TERMINAL BLOCK



### YAESU:

- 1.) NC
- 2.) NC
- 3.) Motor, Yaesu, Pin 4
- 4.) Motor, Yaesu, Pin 5
- 5.) NC
- 6.) NC
- 7.) Potentiometer, wiper pin 2
- 8.) Potentiometer, GND pin 3

### HyGain

- 1.) Brake
- 2.) Motor, CCW
- 3.) Motor, CW
- 4.) Motor, Return (COM)
- 5.) Left Motor (CAP\_A)
- 6.) Right Motor (CAP\_B)
- 7.) Potentiometer (VSRC)
- 8.) NC (RTN)

### Specifications:

Power: 110/220Vac

110VAC @ 3A

Serial Interface Control:

9600 Baud 8N1

Rotator Control Voltage

Yaesu: 11-25Vdc

HyGain: 24-30Vac

Dimensions:

6.7W x 3.8H x 6.7D inches

Enclosure:

Black Anodized Aluminum

## InterConnect Table

<b>DTC-100 TB</b>	<b>HyGain CinchJones 8 Pin</b>	<b>Yaesu 6 Pin</b>
TB-1	Pin 2, Brake	Not Connected
TB-2	Pin 6, Left Limit (CCW)	Not Connected
TB-3	Pin 5, Right Limit (CW)	Pin 4, Motor Right
TB-4	Pin 1, Motor Common	Pin 5, Motor Left
TB-5	Pin 4, Motor Left	Not Connected
TB-6	Pin 8, Motor Right (CW)	Not Connected
TB-7	Pin 7, POT End	Pin2, POT Wiper
TB-8	Not Connected	Pin 3, POT Ground

## Warranty

The DTC-100 is warranted against defects in materials and workmanship for a period of one year from the date of purchase. Contact your local sales representative or the manufacturer for a Return Authorization (RA) number and instructions on returning the product for service. Products cannot be processed unless accompanied by an RA number.

The user is responsible for determining the applicability of the product for any application. The manufacturer is not responsible for any damages, direct or consequential, resulting from the use of its products. Damages due to impact or normal wear are excluded.

The manufacturer will determine, exclusively at its own discretion, where repairs or replacement of the product is required for any warranty claim. In no case will the liability of the manufacturer exceed the original purchase price of the product.