

RTC 3000 Pinout Description

Group	Pin	Description
Power	Supply	Main input power: 0VDC min, 28VDC max. The RTC 3000 is equipped with a 28VDC input shunting clamp to protect against transients. Do not operate motor in a way, regenerative or otherwise, that will cause the input voltage to rise above 28VDC.
	Gnd	Main input power return
Motor	PHA/-	2 phase motor - or 3 phase motor coil phase A: 3A peak, 1 A RMS
	PHB	3 motor coil phase B: 3A peak, 1 A RMS
	PHC/+	2 phase motor + or 3 phase motor coil phase C: 3A peak, 1 A RMS
Hall Sensors	+5V out	Fused +5VDC output for hall sensor
	Gnd	+5V return
	HS3	Hall sense 3 (120°). This must be appropriately connected if you are using a 3 phase brushless motor. Ground this pin if you are using a brush motor.
	HS2	Hall sense 2 (120°). This must be appropriately connected if you are using a 3 phase brushless motor. Leave this pin unconnected if you are using a brush motor.
	HS1	Hall sense 1 (120°). This must be appropriately connected if you are using a 3 phase brushless motor. Leave this pin unconnected if you are using a brush motor.
Encoder	+5V out	Fused +5VDC output for encoder
	Gnd	+5V return
	ENCA	Incremental quadrature encoder A, single ended
	ENCB	Incremental quadrature encoder B, single ended
	ENCI	Incremental quadrature encoder index, single ended
RS-485/RS-232 Communications	+5V out	Fused +5VDC output
	Gnd	+5V return
	RS-232TX	RS-232 Transmit: hook this up to host receive
	RS-232RX	RS-232 Receive: hook this up to host transmit
	RS-485A	RS-485 half duplex pin A: hook this up to host A
	RS-485B	RS-485 half duplex pin B: hook this up to host B
	Sync/UG	User definable I/O. If used as a Sync pin to start motion, it is active low. Otherwise, it is used as a TTL level digital input or output via the UGI or UGO commands. It is equipped with an internal 1Kohm input and the default state is Sync input.
IOA & IOB/ Step & Direction/ Encoder 2 in	+5V out	Fused +5VDC output
	Gnd	+5V return
	Input A	This pin has three functions: I/O A, Step input or external encoder A. If used as an I/O, it is set up as an input or output via commands UAI or UAO. It is equipped with an internal 1Kohm input. If the RTC 3000 is used to control step and direction, it is the step input and is active high. If an external encoder is being used, connect this pin to the quadrature input A.
	Input B	This pin has three functions: I/O B, direction input or external encoder B. If used as an I/O, it is set up as an input or output via commands UBI or UBO. It is equipped with an internal 1Kohm input. If the RTC 3000 is used to control step and direction, it is the direction input. Do not change direction within 4 usec of the step input being high. If an external encoder is being used, connect this pin to the quadrature input B.

RTC 3000 Pinout Description (Continued)

Group	Pin	Description
AniLink Network	+5V out	Fused +5VDC output
	Gnd	+5V return
	Data	Data line to AniLink peripherals – refer to peripheral for proper connections
	Clock	Clock line to AniLink peripherals – refer to peripheral for proper connections
+Limit	+5V out	Fused +5VDC output
	Gnd	+5V return
	+Lim	Positive limit input. This input is active low and is equipped with an internal 1Kohm pullup. If this input is activated, the motor will be commanded to servo to a stop at the current acceleration (use F = 1) or the amplifier will turn off (default state).
+Limit	+5V out	Fused +5VDC output
	Gnd	+5V return
	-Lim	Negative limit input. This input is active low and is equipped with an internal 1Kohm pullup. If this input is activated, the motor will be commanded to servo to a stop at the current acceleration (use F = 1) or the amplifier will turn off (default state).
Memory Port External/Internal	+5V out	Fused +5VDC output
	Gnd	+5V return
	Data Int.	Enable for internal memory. To use the RTC 3000 internal memory, connect this to Data Ext.
	Data Ext.	Connection for external memory. Connect this to the data line of the external memory device. Refer to the data sheet for the external memory module for more details.
	Clock.	Connection for external memory. Connect this to the clock line of the external memory device. Refer to the data sheet for the external memory module for more details.

Notes:

1. Refer to the Animatics SmartMotor User's Manual for details on programming the RTC 3000.
2. All I/O, including A, B, G, hall, encoder, limit and memory ports are TTL interfaces. A valid low is <0.8VDC and a valid high is >2.0VDC. For details on the internal pullups and protection clamps, refer to the Animatics SmartMotor User's Manual.
3. The total current that the RTC 3000 +5V outputs can source is 200 mA.