

U N L I M I T E D   C O N T R O L

CORTEX<sup>®</sup>LT



  
**CAROTRON**

# CORTEX<sup>®</sup> LT

The **CORTEX<sup>®</sup> LT** is a general-purpose micro-controller with flexibility for many different applications. Driven by a powerful **DSP** (*digital signal processor*) the unit has the speed and processing capability to handle even the most difficult tasks. The internal 64K word EE Prom and 64K word RAM provide ample memory for firmware storage and data processing capacity.

Each **CORTEX<sup>®</sup> LT** is supplied with MS-Windows (98 and higher) compatible **CORTEX<sup>®</sup> LT** Link Software and a serial cable for interface between the **CORTEX<sup>®</sup> LT** and an RS-232 port on a PC. The Link Software allows specific firmware to be selected, configured and downloaded to the **CORTEX<sup>®</sup> LT** hardware. The Link Software also allows for calibration, monitoring, program storage and I/O simulation.

The **“LT Builder”** provides a simplified configuration guide for standard firmware selections. Through a series of application questions, the **“LT Builder”** pulls together the application blocks to perform the desired tasks. Advanced users can also access the system blocks directly and link functions for modifications to the standard configurations. System Blocks are displayed graphically in the Link Software to aid in understanding the functions to be performed by each block.

Analog, Frequency and Digital I/O functions are supplied for interfacing the **CORTEX<sup>®</sup> LT** to real world applications. The Analog and Frequency inputs are easily scaled by the **CORTEX<sup>®</sup> LT** Link Software to provide for offset and span control of the input signals. Analog and Frequency outputs are controlled by the **CORTEX<sup>®</sup> LT** firmware to provide speed, torque, tension, and many other system control functions. Digital inputs and outputs provide system logic for parameter selection or machine logic functions. Expansion communication ports allow for custom units to have expanded I/O through Modbus communications.



Each model provides application specific software along with:

- 4 Analog Voltage inputs
- 2 Frequency inputs
- 5 Digital Logic inputs
- 2 Relay outputs
- 2 Analog Voltage outputs
- 1 Frequency or Digital output
- 1 Digital output
- 3 Communication ports

## APPLICATIONS

- Constant Tension Center Winder Control
- Dancer Position Control
- Center Unwind Control
- Loadcell Tension Control
- Electronic Speed Reference Control
- Pump Control
- Level Control
- Test Equipment
- Custom Applications



**Keypad Option**



**Sonitrac Option**



**Custom Application**



**Touch Screen Option**

# SPECIFICATIONS

## AC INPUT

- 115 VAC  $\pm$ 10%, 50/60Hz
- Internally Fused at 2.0 Amps

## PROGRAMMABLE INPUTS

### Analog

- 4 inputs available (12 Bit Resolution)
- Inut range: 0 to 10VDC

### Frequency

- 2 inputs available
- Input ranges: 42KHz Max, square wave
- Voltage: +15VDC max
- Vil = 0.0VDC min to 1.1 VDC max
- Vih = 3.0VDC min to 15 VDC max

### Digital

- 5 inputs available (optically isolated)
- Logic levels
- Sink Mode:
  - Vil = +20VDC max
  - Vih = 0.0VDC min to +17 VDC max

## Source Mode:

- Vil = +5.0VDC max
- Vih = +8.0VDC min to +30.0VDC max

## POWER SUPPLIES

- +10VDC @ 20 mA
- +24VDC @ 100 mA (isolated)
- +15VDC @ 100 mA
- +5VDC @ 100 mA (com C)

## PROGRAMMABLE OUTPUTS

### Relay

- 2 outputs available
- Output ranges: Form-C contact, rated for 3A @ 115VAC & 30VDC

### Analog

- 2 outputs available (12 Bit Resolution)
- Output ranges: 0 to 10VDC, 20 mA max

## Frequency/Digital

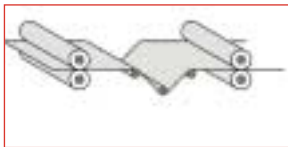
- 1 frequency output available
- Output ranges: 0 to 5KHz
- 2 Digital outputs (only if frequency output not used) 16VDC max @ 20 mA

## COMMUNICATIONS

- 1 RS 232/485 for computer interface
- 1 RS 232/485 w/ Modbus RTU Protocol For Keypad or Touchscreen Interface
- 1 RS485/Modbus RTU for Expansion Card Interface

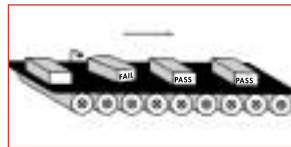
## DSP PROCESSOR

- 64 K words Ram
- 64 K words EE Prom
- 20 MHz



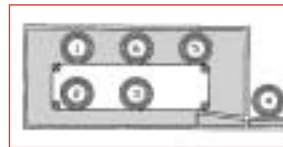
### ZONE TENSION CONTROL

- Loadcell
- Dancer



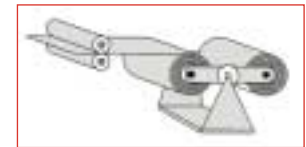
### PRODUCT ALIGNMENT

- Conveyors
- Packaging



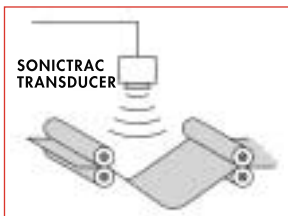
### STORAGE/ RETRIEVAL

- Bin/ Location Mapping
- Speed/ Direction Profiling



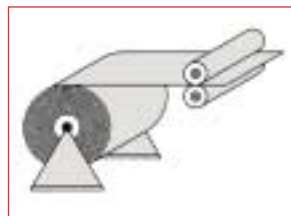
### TURRET WINDER

- Dancer
- CTCW
- Loadcell



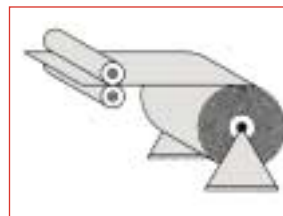
### LOOP CONTROL

- Sonic Sensor
- Photo Sensor



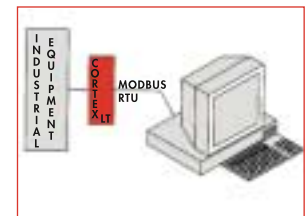
### CENTER LET-OFF CONTROL

- Brake
- AC/DC Drive



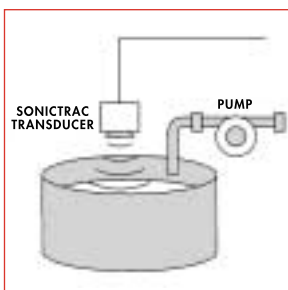
### CENTER WINDER

- Dancer
- CTCW
- Loadcell



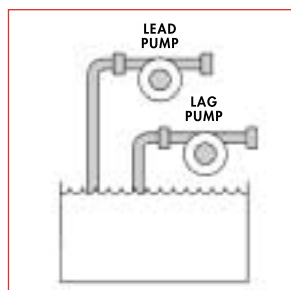
### DATA AQUSITION

- Automated Testers
- Motor/Control



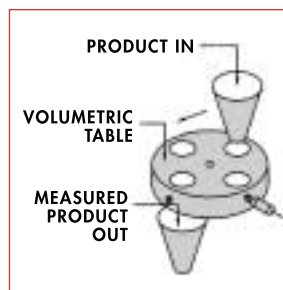
### LEVEL CONTROL

- Sonic Sensor
- Pressure Sensor



### DUPLEX PUMP CONTROL

- Alternating Logic
- Lead Lag Logic
- Level Sensing



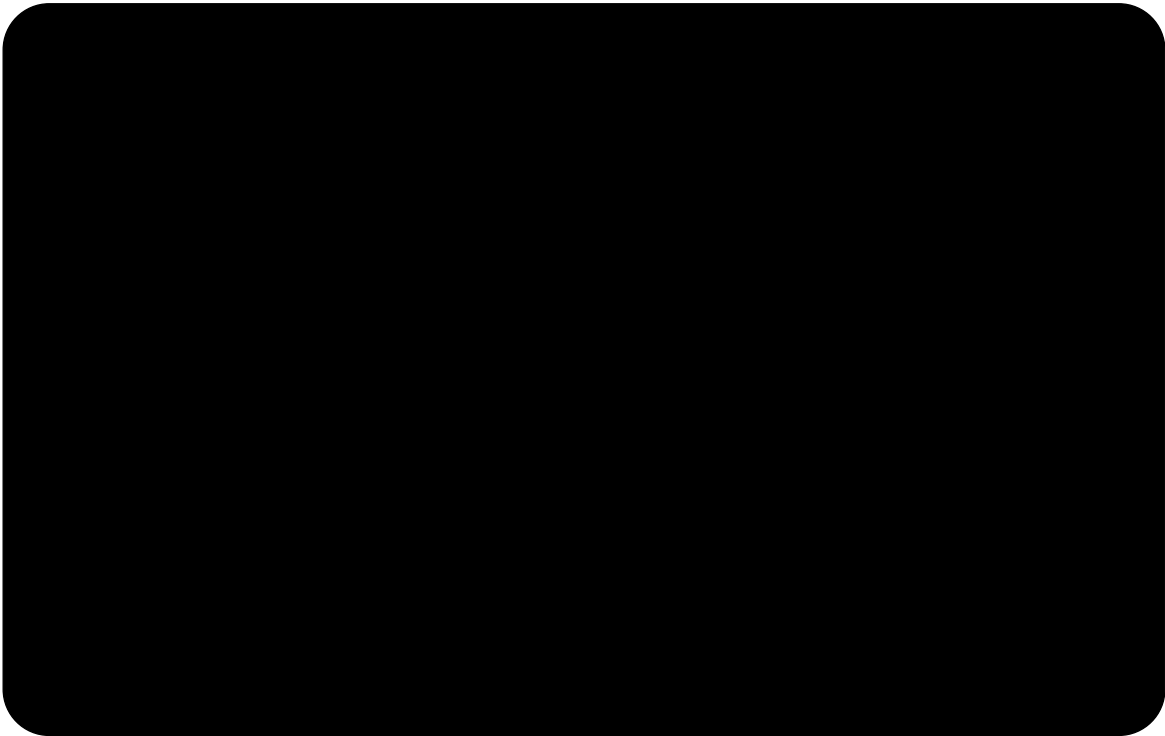
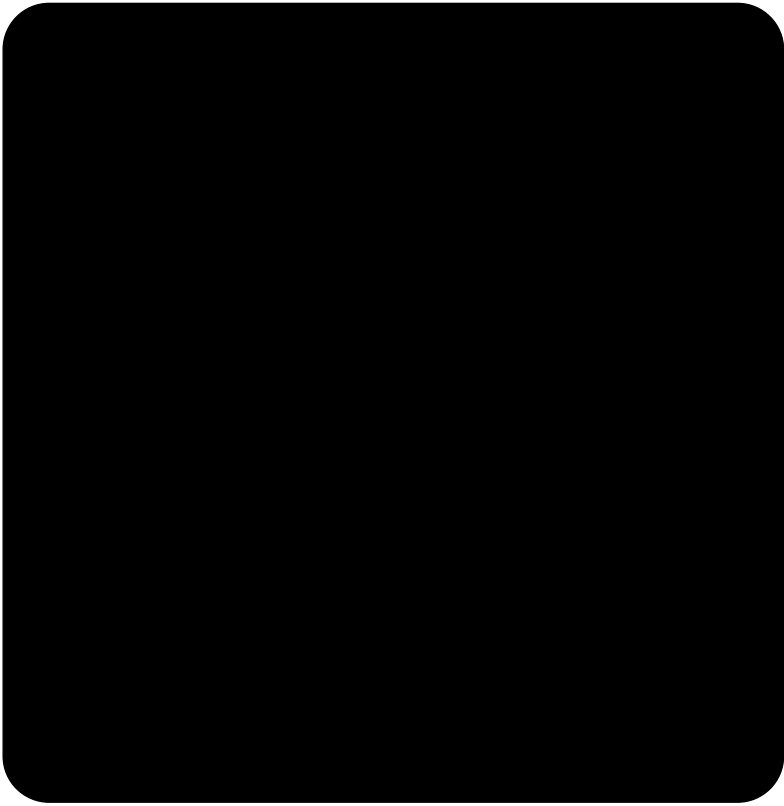
### VOLUMETRIC PACKAGING

- Table Positioning
- Machine Speed Logic



### UNLIMITED CONTROL

- Cortex LT Intelligence
- Carotron Design Experience
- Your Machine Requirements



Your custom application is welcome!  
For more information, visit us online  
[www.carotron.com](http://www.carotron.com).



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