CAROTRON
Driven by Excellence

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CORTEX LT

Model D14523-000

The **CORTEX® LT V2** is Carotron's 2nd generation Industrial System controller. It was developed with the flexibility to handle many different industrial applications. Driven by a powerful DSP (digital signal processor) the unit has the speed and processing capability to handle even the most difficult tasks. Each device is programmed with MS-Windows (XP and higher) compatible CaroLink software (available free on our website). A USB serial cable is typically used to interface between the device and a PC. The software allows specific application configurations to be selected, configured, and downloaded into the unit. The CaroLink software also allows for calibration, monitoring, program storage, and I/O simulation.

A feature of the CaroLink software is the "Application Builder". It provides a wizard tool for selecting pre-configured application presets. Through a series of application questions, the "Builder" pulls together the application blocks to perform the desired tasks. Advanced users can also access the system blocks directly and modify the standard configurations. System blocks are displayed graphically in the software to aid in understanding the functions to be performed by each block. Analog, Frequency and Digital I/O functions are typically used for interfacing the unit to real world applications. The Analog and Frequency inputs are easily scaled by the software to provide for offset and span control of the input signals. Analog and Frequency outputs are typically used to provide speed, torque, and/or tension control functions. Digital inputs and outputs provide system logic for parameter selection or machine logic functions.

Numerous communications options allow the unit to interface to HMIs, PLCs, etc...

Typical Applications
- Constant Tension Center Wind (CTCW)
- Dancer Position
- Center Unwind (Driven or brake)
- Loadcell Tension
- Pump Control
- Remote I/O
- Test Equipment
- Custom Applications

New features vs the first generation unit
- Bipolar Analog Inputs (-10..+10VDC)
- Bipolar Analog Outputs (-10..+10VDC)
- Counter functionality on both Frequency Inputs
- Independent Frequency Outputs
- Isolated serial communications (Com A & C)
- Isolated Modbus® TCP Ethernet interface (Com B)
- Isolated USB serial interface (Com D)

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Specifications

Input Power
- 115 VAC ± 10%, 50/60 Hz ± 2 Hz

Internal Power Supplies
- 24VDC @ 50ma
- +15VDC @ 100mA
- 10VDC @ 20mA
- 5VDC @ 100mA

Analog Inputs (4)
- 13 bit resolution (12bit +sign)
- Unipolar Mode: 0..+10VDC
- Bipolar Mode: -10..+10VDC

Frequency (High Speed Digital) Inputs (2)
- 50KHz Max, square wave
- Voltage: +15 VDC max
- High Speed Counter capability

Digital Inputs (5)
- 30VDC max
- Sink/Source selectable

Analog Outputs (2)
- 13 bit resolution (12 bit + sign)
- Unipolar Mode: 0..+10VDC
- Bipolar Mode: -10..+10VDC

Relay Outputs (2)
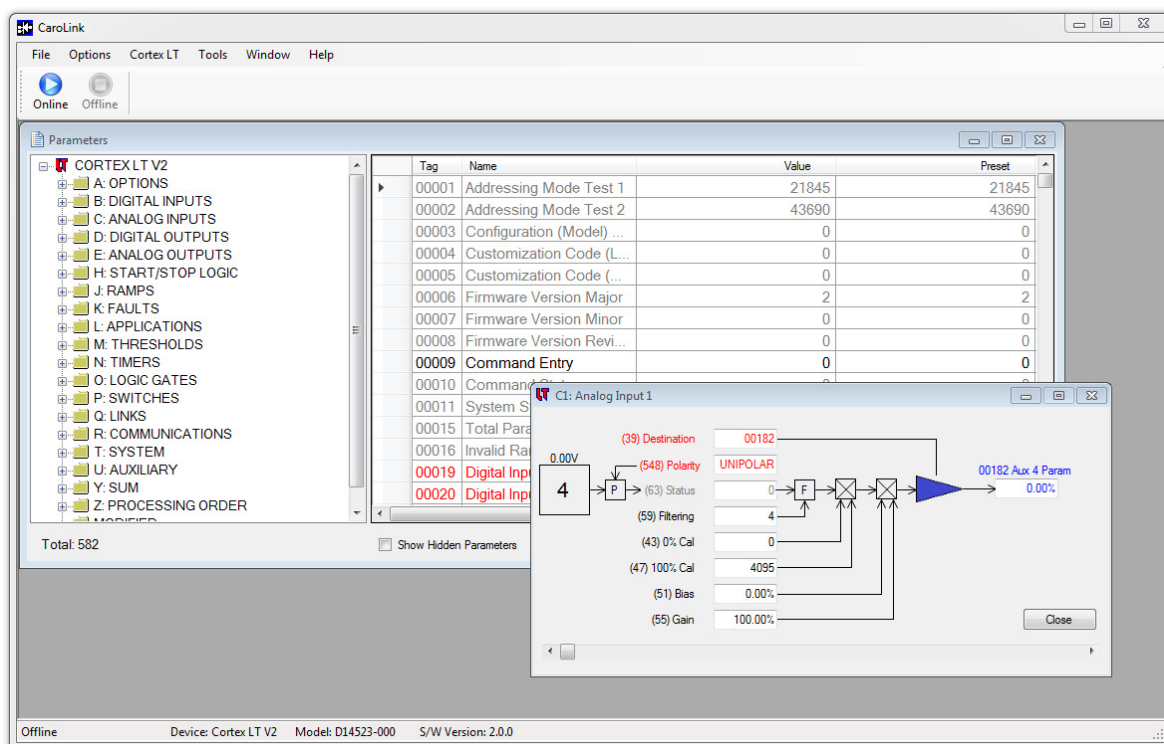- Form-C contact
- Rated for 3A @ 115 VAC & 30 VDC

Frequency/Digital Outputs (2)
- Isolated Open collector output
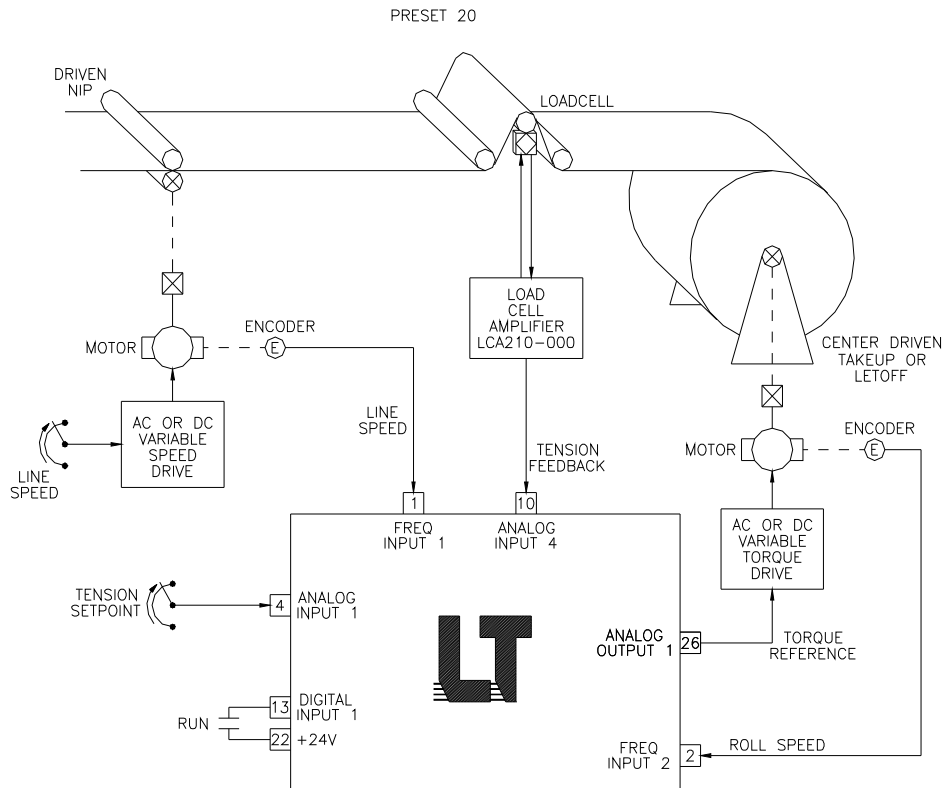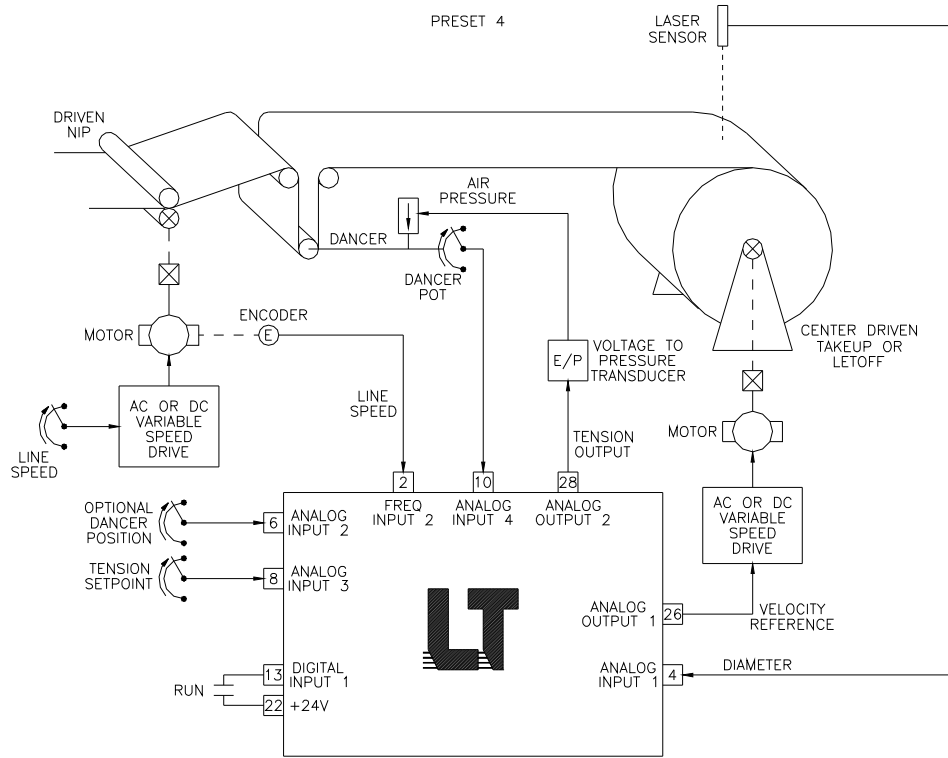- 50KHz Max, square wave

Isolated Communications (4)
- Com A: Modbus® RS422/485 Terminals
- Com B: Modbus® TCP Ethernet
- Com C: Modbus® RS232/422 RJ12
- Com D: USB
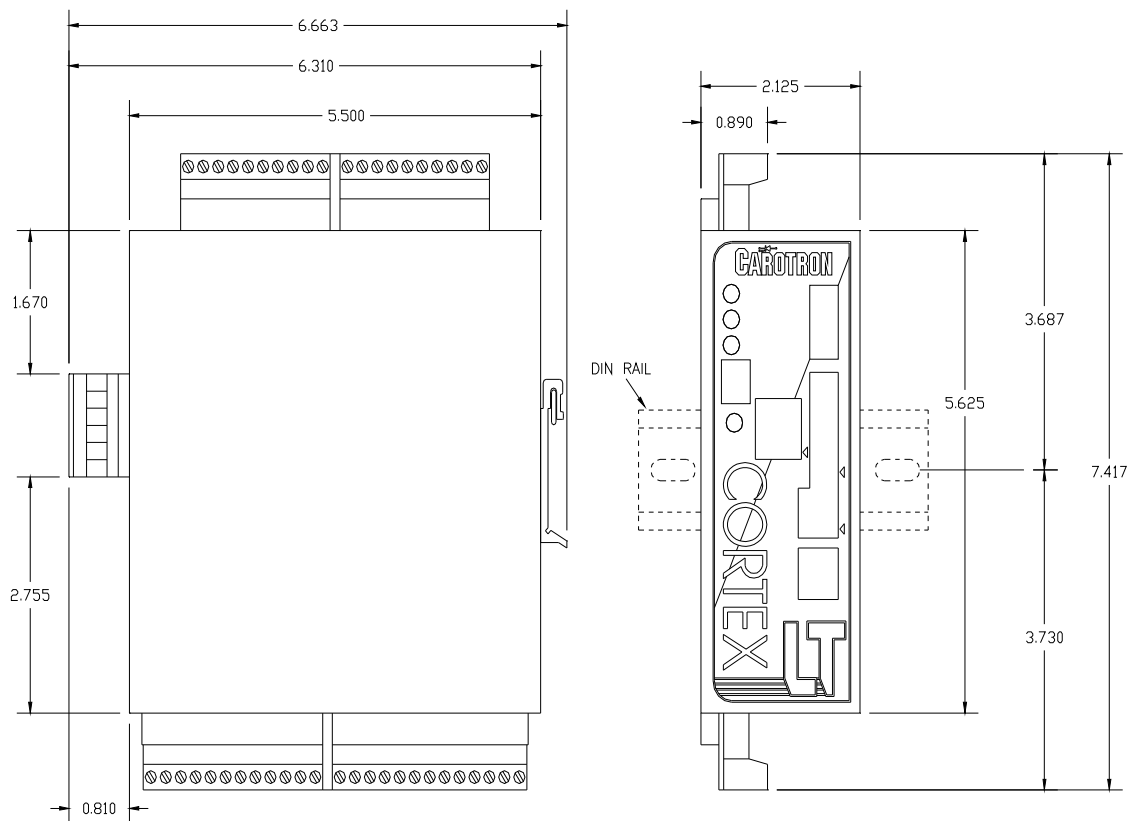
CaroLink Software Screenshot

Application Examples

Below are two examples of the over 20 preset applications the Cortex LT can handle. Please refer to the user manual or contact us for additional details.

PRESET 4

DRIVEN NIP
LASER SENSOR
AIR PRESSURE
DANCER
DANCER POT
MOTOR
ENCODER (E)
VOLTAGE TO PRESSURE TRANSDUCER
E/P
CENTER DRIVEN TAKEUP OR LETOFF
AC OR DC VARIABLE SPEED DRIVE
LINE SPEED
LINE SPEED
TENSION OUTPUT
MOTOR
AC OR DC VARIABLE SPEED DRIVE
OPTIONAL DANCER POSITION — 6 ANALOG INPUT 2
FREQ INPUT 2 |2| ANALOG INPUT 4 |10| ANALOG OUTPUT 2 |28|
TENSION SETPOINT — 8 ANALOG INPUT 3
ANALOG OUTPUT 1 |26| VELOCITY REFERENCE
ANALOG INPUT 1 |4| DIAMETER
RUN — 13 DIGITAL INPUT 1
22 +24V

PRESET 20

DRIVEN NIP
LOADCELL
MOTOR
ENCODER (E)
LOAD CELL AMPLIFIER LCA210-000
CENTER DRIVEN TAKEUP OR LETOFF
AC OR DC VARIABLE SPEED DRIVE
LINE SPEED
LINE SPEED
TENSION FEEDBACK
MOTOR
ENCODER (E)
AC OR DC VARIABLE TORQUE DRIVE
FREQ INPUT 1 |1| ANALOG INPUT 4 |10|
TENSION SETPOINT — 4 ANALOG INPUT 1
ANALOG OUTPUT 1 |26| TORQUE REFERENCE
RUN — 13 DIGITAL INPUT 1
22 +24V
FREQ INPUT 2 |2| ROLL SPEED

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Dimensions

NOTES:
1. ALL DIMENSIONS ARE IN INCHES.

Connections

CORTEX® LT V2

TB1-A

1	FREQUENCY INPUT 1
2	FREQUENCY INPUT 2
3	COM
4	ANALOG INPUT 1
5	COM
6	ANALOG INPUT 2
7	COM
8	ANALOG INPUT 3
9	COM
10	ANALOG INPUT 4
11	COM
12	+10V

TB1-B

13	DIGITAL INPUT 1
14	DIGITAL INPUT 2
15	DIGITAL COM
16	DIGITAL INPUT 3
17	DIGITAL INPUT 4
18	DIGITAL COM
19	DIGITAL INPUT 5
20	SINK/SOURCE
21	DIGITAL COM
22	+24V
23	LINE/+24VDC
24	NEUTRAL/COM
25	GND

TB1-C

ANALOG OUTPUT 1	26
COM	27
ANALOG OUTPUT 2	28
COM	29
	30
RELAY OUTPUT 1	31
	32
	33
RELAY OUTPUT 2	34
	35

TB1-D

+15V	36
+	37
FREQ/DIGITAL OUTPUT 1	38
−	39
COM	40
+15V	41
+	42
FREQ/DIGITAL OUTPUT 2	43
−	44
COM	45

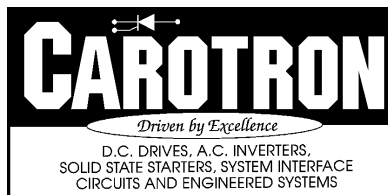# *Ordering Options*

<u>D14523-000</u>
Device only

<u>CLT2020-000</u>
Kit that includes device, USB cable, and PC software

Cortex LT V2 Industrial Controller
Model D4523-000

View or download the complete instruction manual (MAN1064-00) from www.carotron.com.