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What should potential users expect to be able to do/need to do in order to use.

Caplex® Software

Caplex® Graphical User Interface (GUI)
Generalized Template Controllers
Device Specific Controllers
Caplex® Utility Functions

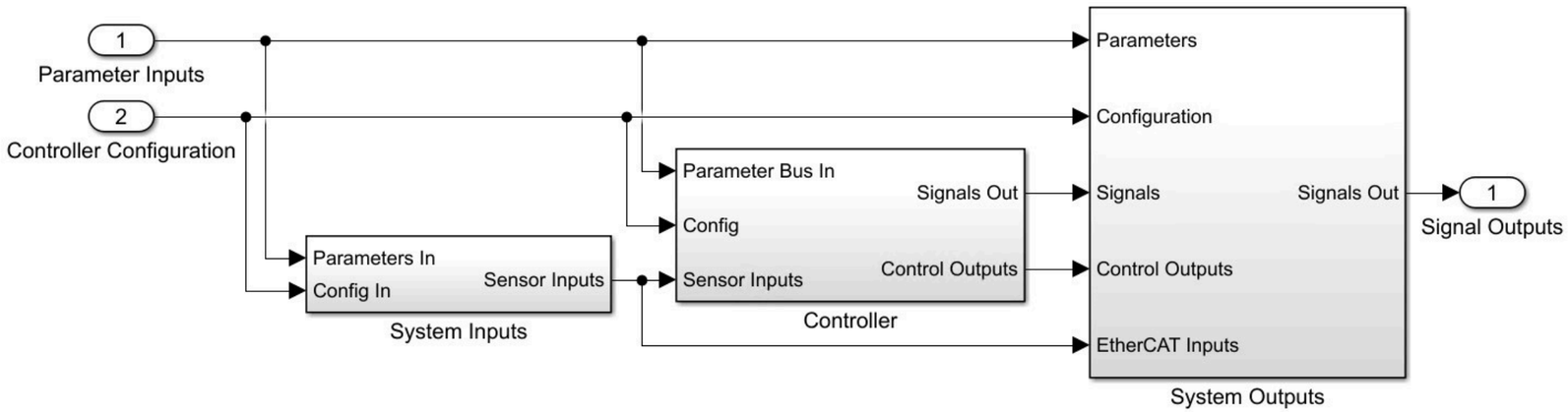

Image shown is a representation only. Actual setup may vary based on customer needs.

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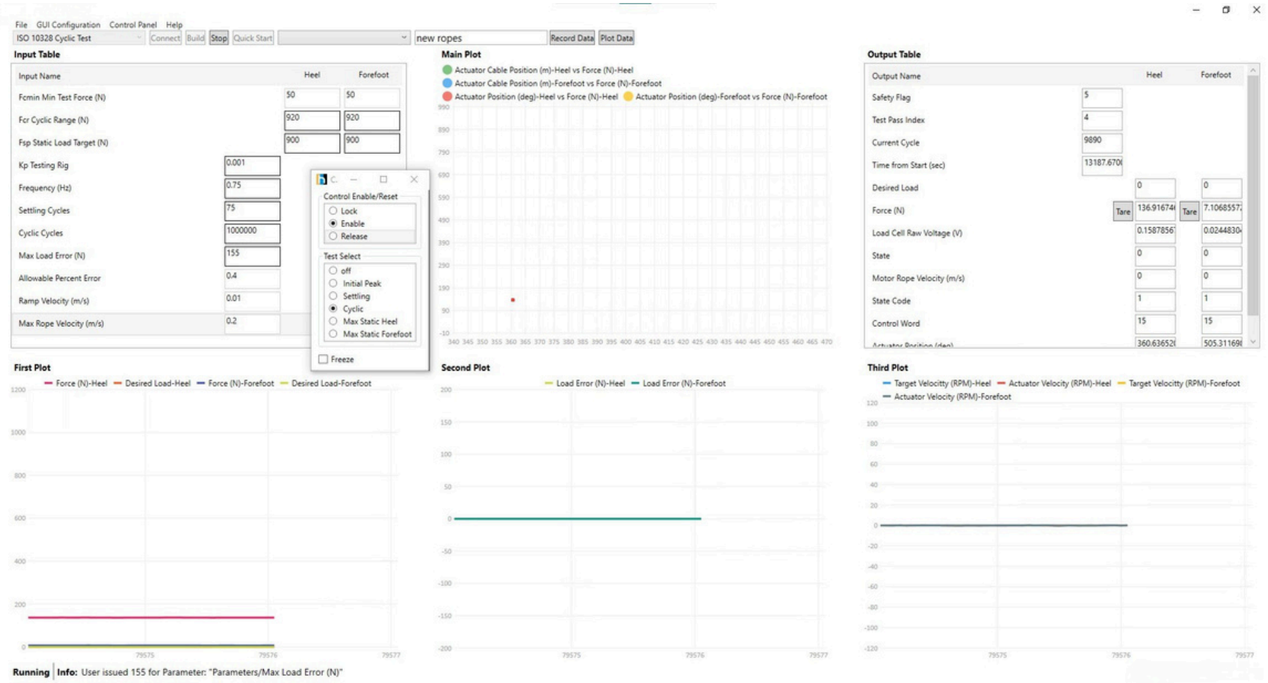
User configurable GUI with customizable control inputs

Predesigned GUI eliminates need for custom development!
Any arbitrary controller can be used with the GUI so long as style guide is followed.

Humotech GUI



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Template Controllers

Template controller built in Simulink
Block diagram format creates a clean wrapper for sensor processing and custom controller development

Organizational style provides user freedom for development and collaboration

Main Features for all controllers implemented within MATLAB/Simulink:

- Default communication protocols: digital communication with and control of actuators via EtherCAT
- User adjustable control loop frequency
- User adjustable sensor sample rate
- Minimal need for filtering if any

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Device Specific Controllers

Building upon years of R&D and customer usage

Impedance based controllers have been the foundation of our controller development

Equipment can be used with any variety of controllers (Time-Based, EMG, Learning)

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Caplex® Utility Functions

Caplex® controllers come with many utility functions at no extra cost to set your team up for success! These include software to characterize passive springs included in our products, xxxxxx, xxxxxx, and more.

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Environment and Requirements

Our system runs on a Windows machine Windows 10 and later
MATLAB and Simulink software forms the base of the control software (r2020a) using minimal toolboxes:
MATLAB, Simulink, Simulink Real-Time, Matlab Coder, Simulink Coder

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default control algorithms
what have others implemented with this system

Humotech has the most familiarity with angle based (impedance) controllers. The system applies a force based on the relationship between measured angle and desired force.

Other users have successfully developed controllers using this system, these have included: time based, EMG based
NMM, trigger based, etc.

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