

Micro850® Overview	2080-LC50-48xxx
Embedded communication	USB, Serial, Ethernet
Basic I/O size	48 points
Max number of I/O	Up to 132
Max number of Expansion I/O	4
Motion axis (Only available in model with transistor output)	Up to 3 PTO axes

**Micro850® Capacity**

- LC50-48xxx has 140KB of memory and supports 5 plug in I/O modules & 4 expansion modules.
- Supports Ladder Programming, Function Block Diagram, Structured Text

**Micro850® Configuration**

- External Power Supply
- Embedded I/O 28 In, 20 Out, Base Analog I/O channels via plug in or expansion.
- 6 High Speed Counters

**Micro850® Performance**

- Designed for larger standalone machine applications that require more I/O or higher performance analog I/O
- Number of I/O points embedded in the base 24,48 points

**PanelView™ 800 Performance**

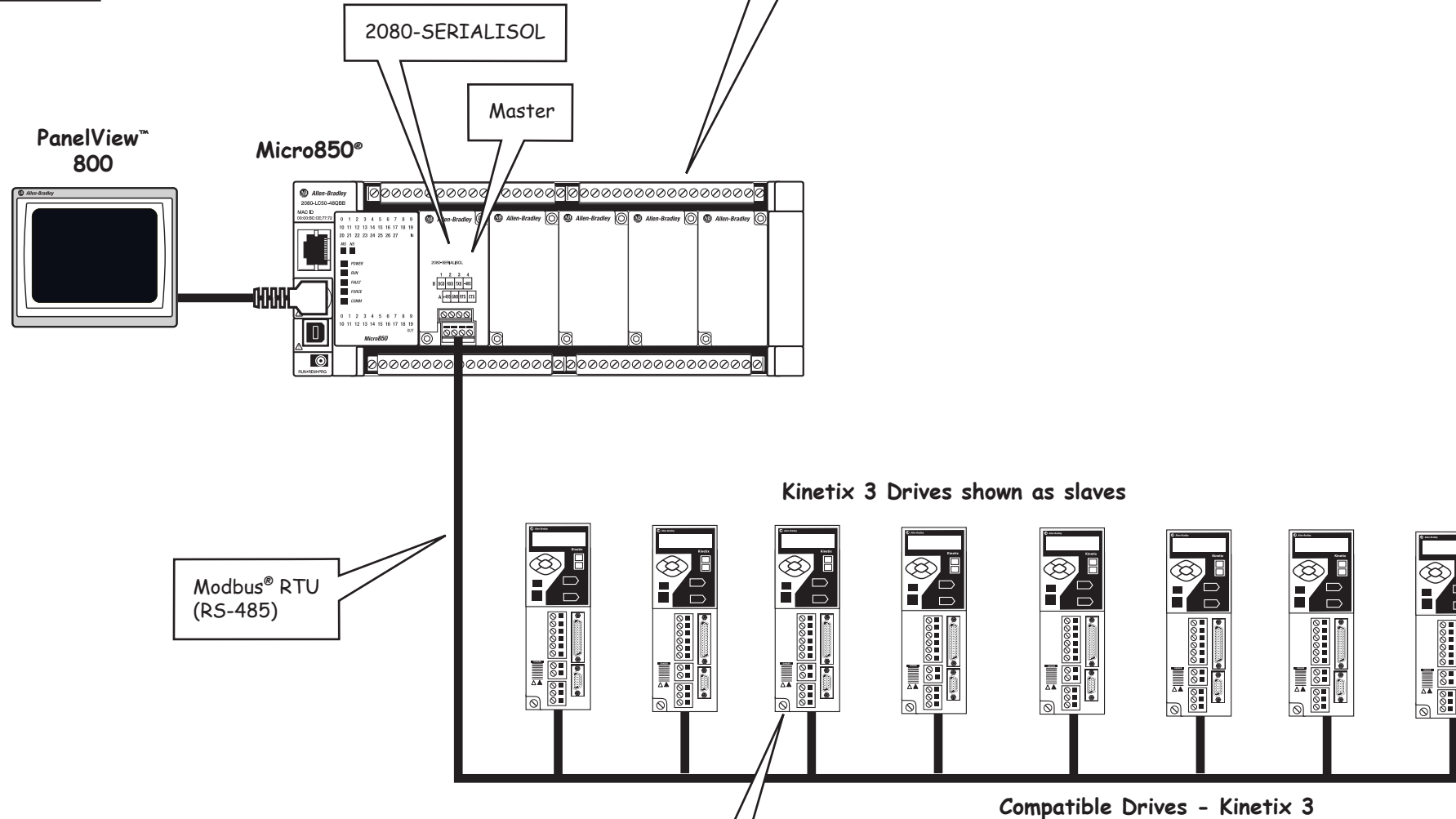
- 4, 7, 10 inch Display Sizes
- TFT touch screen, wide LCD

**PanelView™ 800 Configuration**

- Communicate to micro controllers (MicroLogix™, Micro800®) and other devices using serial (RS232, RS422/485) protocols and Ethernet
- Features include unicode language switching, alarm messages and history, and basic recipe capability

**PanelView™ 800 Capacity**

- Multi-communication protocols include Modbus RTU, Modbus/TCP
- USB port for transferring files or updating firmware, Supports micro SD memory cards



**About this Configuration**

A Micro850 controller is connected to eight Kinetix 3 servo drives as follows:

- Modbus RS-485 daisy chained from a 2080-SERIALISOL plug-in module on the controller to the embedded Modbus ports on the drives at 19.2 kbaud
- Terminating Resistor should be used at the end nodes
- Reference to UDFB: <http://www.rockwellautomation.com/go/scmicro800>

File name: Micro800 UDFBs:  
 Kinetix 3  
 RA\_K3\_MBUS\_CFG\_INDEX\_READVALUES  
 RA\_K3\_MBUS\_CFG\_INDEX\_WRITEVALUES  
 RA\_K3\_MBUS\_CMD\_INDEXING  
 RA\_K3\_MBUS\_CMD\_JOG  
 RA\_K3\_MBUS\_STS  
 RA\_K3\_MBUS\_STS\_EXTENDED

**Kinetix 3 Capacity**

- Input volt range of 170...264V AC single and three-phase
- Continuous power output of 0.05 W...1.5 kW
- Modbus-RTU serial communications for changing drive parameters during runtime

**Kinetix 3 Performance**

- CCAT contains Building Block for indexing multiple axes via Modbus

**Kinetix 3 Configuration**

- Automatic motor recognition and gain settings
- Cost-effective motion control solution for smaller, low-axis count applications
- Flexible command interfaces including digital I/O, analog, pulse train and Modbus-RTU
- Configurable with Connected Components Workbench Software

Note: Performance is what we tested, not the max capacity



**Micro800 Architecture for Kinetix 3 Servo Indexing**

## Bill of Materials

Qty	Catalog #	Description
<b>System: Controller Hardware</b>		
1	2080-LC50-48QWB	Micro 850 Controller
1	2080- SERIALISOL RS232/485	Isolated Serial Port Plug in Module
1	2080-PS120-240VAC	Power Supply Module
<b>HMI Hardware</b>		
1	2711R-T4T	PanelView 800, 4.3 in HMI Terminal, Touch Screen TFT, Serial and Ethernet ports
<b>Motion Hardware</b>		
8	2071-AP1	Kinetix servo drive, 2.38Amps
8	TL-A130P-BJ32AA	Servo Motor
8	2090-CFBM6DD-CCAA03	Cable,Feedback,M-Circ.Plastic.D-DB15,INCR CC ,Std,3M
8	2090-CPWM6DF-16AA03	Cable,Power,M-Circ.Plastic.D-Flying Lead,16AWG ,Std,3M
1	2090-CCMDSDS-48AA01	Serial Communication cable between K3 drive & 2080-SERIALISOL plug-in
7		Serial Communication cable between K3 drives
<p><b>Note:</b> Catalog numbers consist of characters, each of which identifies a specific version or option for that component. Reference Publication GMC-SG001-EN-E Kinetix Motion Control Selection Guide for additional information</p>		
<b>Configuration Tool Required</b>		
1	9328-SO001-EN-C	Connected Components Workbench software

## About this Configuration

This report documents the measured start/stop communications performance of a Micro850® controller communicating with up to eight Kinetix 3 indexing servo drives over Modbus®, while monitoring status items from each drive.

## Software Setup

The Micro850 controller was programmed to issue a start indexing command to up to eight drives and then log how long it took for each drive's motion Output to report that its motor was running, using the 10 microsecond clock as its timebase. Likewise, ten seconds later the Micro850 controller was programmed to issue a stop indexing command to up to eight drives and then log how long it took for each drive's motion output to report that its motor was stopped, using the 10 microsecond clock as its timebase. Every 10 seconds the start indexing and stop indexing commands would alternate for 100 cycles. All data was logged to a microSD card and later transferred to Excel in order to calculate the minimum, maximum and average start and stop times over the 100 cycles. The UDFB used to issue the start and stop indexing commands is RA\_K3\_MBUS\_IndexControl.

## Performance Table

Measured Performance (in milliseconds) for 100 Start/Stop Cycles						
Modbus	Start Min	Start Max	Start Avg	Stop Min	Stop Max	Stop Avg
1-drive	22.52	104.52	47.65	31.07	117.19	60.85
2-drives	27.61	134.17	75.45	32.61	148.40	78.28
4-drives	57.93	209.27	128.97	44.02	275.44	168.53
8-drives	253.61	1709.97	711.62	260.67	1815.72	704.87

Note: In addition, inputs 4-11 on the Micro850 were wired to Output1 on drives 1-8, which was configured in each drive for Motion. This provided the feedback to the controller that the start and stop indexing commands had been executed.

## About the Products

### Micro850 Controllers

- The Micro850 controller is equipped with the same form factor, plug-in support, instruction/data size and motion capabilities as the 24-pt and 48-pt Micro830 controllers
- Support up to four Micro850 Expansion I/O modules, Up to a maximum of 132 I/O points (with 48-pt model)
- Designed for larger standalone machine applications that require more I/O or higher performance analog I/O than supported by Micro830.
- Structured Text, Ladder Diagram and Function Block editors that support
- Symbolic addressing
- Connected Components Workbench software is used for PLC programming, HMI and Drives configuration

### PanelView 800

- A full line of displays ranging from 4" to 10"
- Communicate to MicroLogix, Micro800 and SLC controllers via serial (RS232 or RS422/RS485) networks and EtherNet/IP.
- Features include unicode language switching, alarm messages and history, and basic recipe capability

### Kinetix 3 Servo Drives

Single-axis solution for low-complexity motion applications, with or without a PLC

- Digital I/O, analog, preset velocity, and pulse-train command interfaces
- Performs indexing on up to 64 points through serial communication or over digital I/O
- 170...264V AC, (200V-class) single-phase or three-phase

### For More Information and Help

For more information contact your local distributor or Rockwell Automation sales representative.

- [www.rockwellautomation.com](http://www.rockwellautomation.com)
- Publication Library
- My Support
- A - Z Product Directory