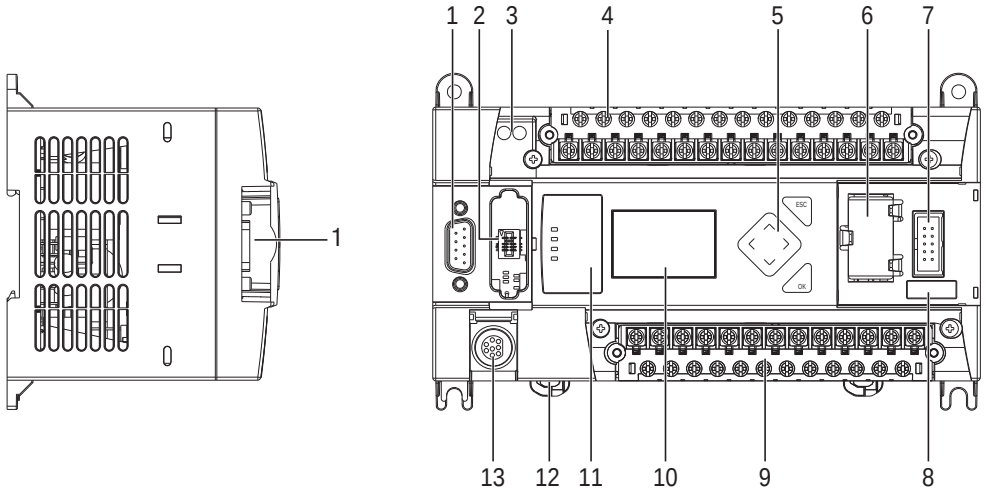
Hardware Overview

Hardware Features

The MicroLogix 1400 programmable controller contains a power supply, input and output circuits, a processor, an isolated combination RS-232/RS-485 communication port, an Ethernet port, and a non-isolated RS-232 communication port. Each controller supports 32 discrete I/O points (20 digital inputs, 12 discrete outputs) and 6 analog I/O points (4 analog inputs and 2 analog outputs: 1766-L32BWAA, 1766-L32AWAA, and 1766-L32BXBA only).

Figure 1 shows the hardware features of the controller.

Figure 1 - Controller Hardware Features



Left side view **Top view**

Controller Description

	Description		Description
1	Comm port 2 – 9-pin D-shell RS-232C connector	8	Battery connector
2	Memory module	9	Output terminal block
3	User 24V (for 1766-BWA and 1766-BWAA only)	10	LCD display
4	Input terminal block	11	Status indicator panel
5	LCD display keypad (ESC, OK, Up, Down, Left, Right)	12	Comm port 1 – RJ45 connector
6	Battery compartment	13	Comm port 0 – 8-pin mini DIN RS-232C/RS-485 connector
7	1762 expansion bus connector		

Controller Input and Output Description

Catalog Number	Description				
	Input Power	User Power	Embedded Discrete I/O	Embedded Analog I/O	Comm. Ports
1766-L32BWA	100/240V AC	24V DC	12 fast 24V DC inputs 8 normal 24V DC inputs 12 relay outputs	None	1 RS-232/RS-485[1] 1 Ethernet 1 RS-232[2]
1766-L32AWA		None	20 120V AC inputs 12 relay outputs		
1766-L32BXB	24V DC		12 fast 24V DC inputs 8 normal 24V DC inputs 6 relay outputs 3 fast DC outputs 3 normal DC outputs		
1766-L32BWAA	100/240V AC	24V DC	12 fast 24V DC inputs 8 normal 24V DC inputs 12 relay outputs	4 voltage inputs 2 voltage outputs	
1766-L32AWAA		None	20 120V AC inputs 12 relay outputs		
1766-L32BXBA	24V DC		12 fast 24V DC inputs 8 normal 24V DC inputs 6 relay outputs 3 fast DC outputs 3 normal DC outputs		

(1) Isolated RS-232/RS-485 combo port.
(2) Non-isolated RS-232. Standard D-sub connector

Component Descriptions

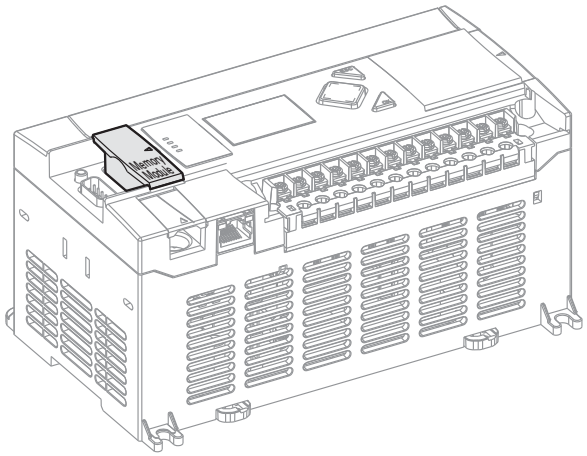
MicroLogix 1400 Memory Module and Built-in Real-time Clock

The controller has a built-in real-time clock to provide a reference for applications that need time-based control.

The controller is shipped with a memory module port cover in place. You can order a memory module, 1766-MM1, as an accessory. The memory module provides optional backup of your user program and data, and is a means to transport your programs between controllers.

The program and data in your MicroLogix 1400 is non-volatile and is stored when the power is lost to the controller. The memory module provides additional backup that can be stored separately. The memory module does not increase the available memory of the controller.

Figure 2 - 1766-MM1 Memory Module



Do not control the master control relay with the controller. Provide the operator with the safety of a direct connection between an emergency stop switch and the master control relay.

Emergency Stop Switches

When using emergency stop switches, adhere to the following points:

- Do not program emergency stop switches in the controller program. Any emergency stop switch should turn off all machine power by turning off the master control relay.
- Observe all applicable local codes concerning the placement and labeling of emergency stop switches.
- Install emergency stop switches and the master control relay in your system. Verify that relay contacts have a sufficient rating for your application. Emergency stop switches must be easy to reach.
- In the following illustration, input and output circuits are shown with MCR protection. However, in most applications, only output circuits require MCR protection.

Figure 4 and Figure 5 show the master control relay wired in a grounded system.

In most applications input circuits do not require MCR protection; however, if you must remove power from all field devices, you must include MCR contacts in series with input power wiring.

Figure 4 - Schematic (Using IEC Symbols)

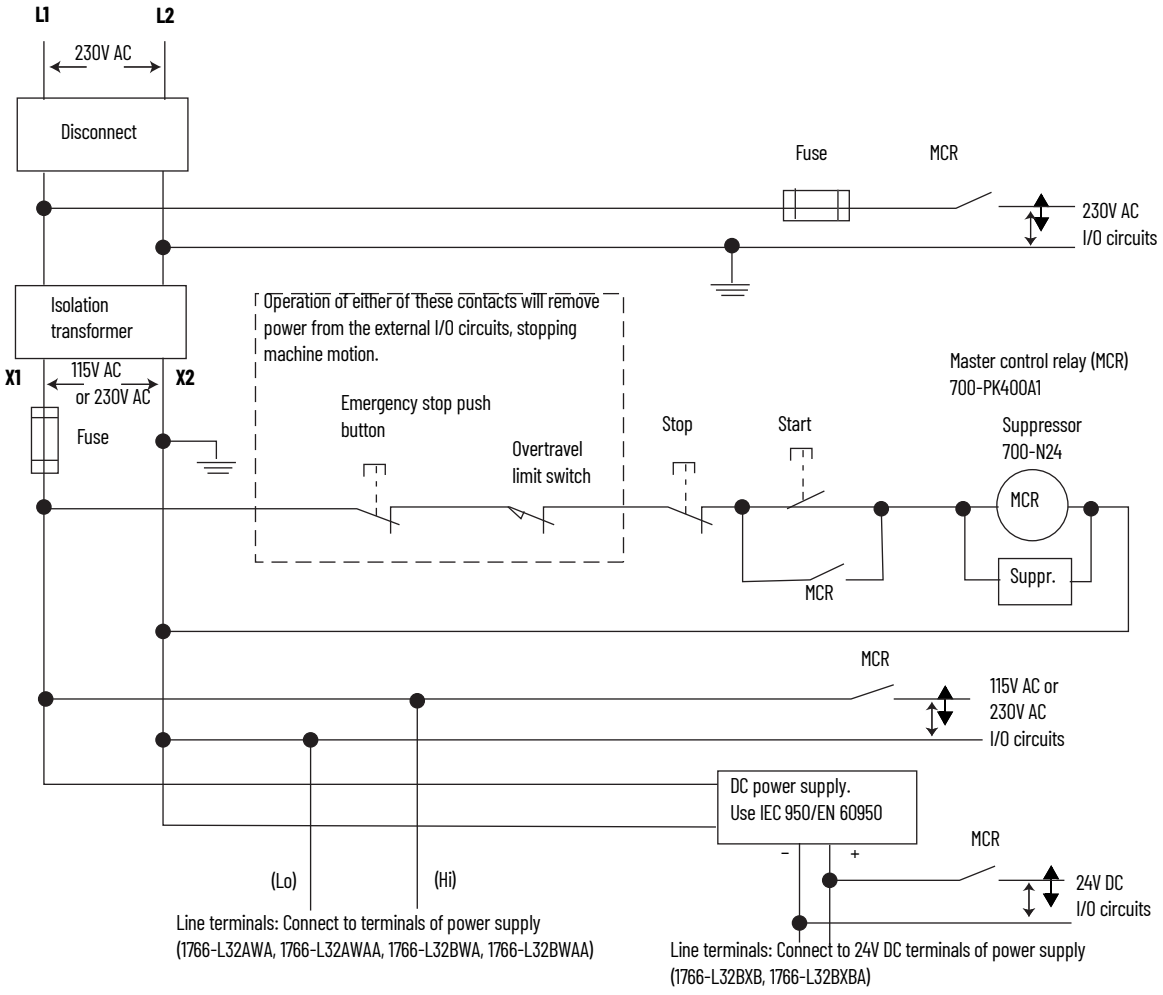
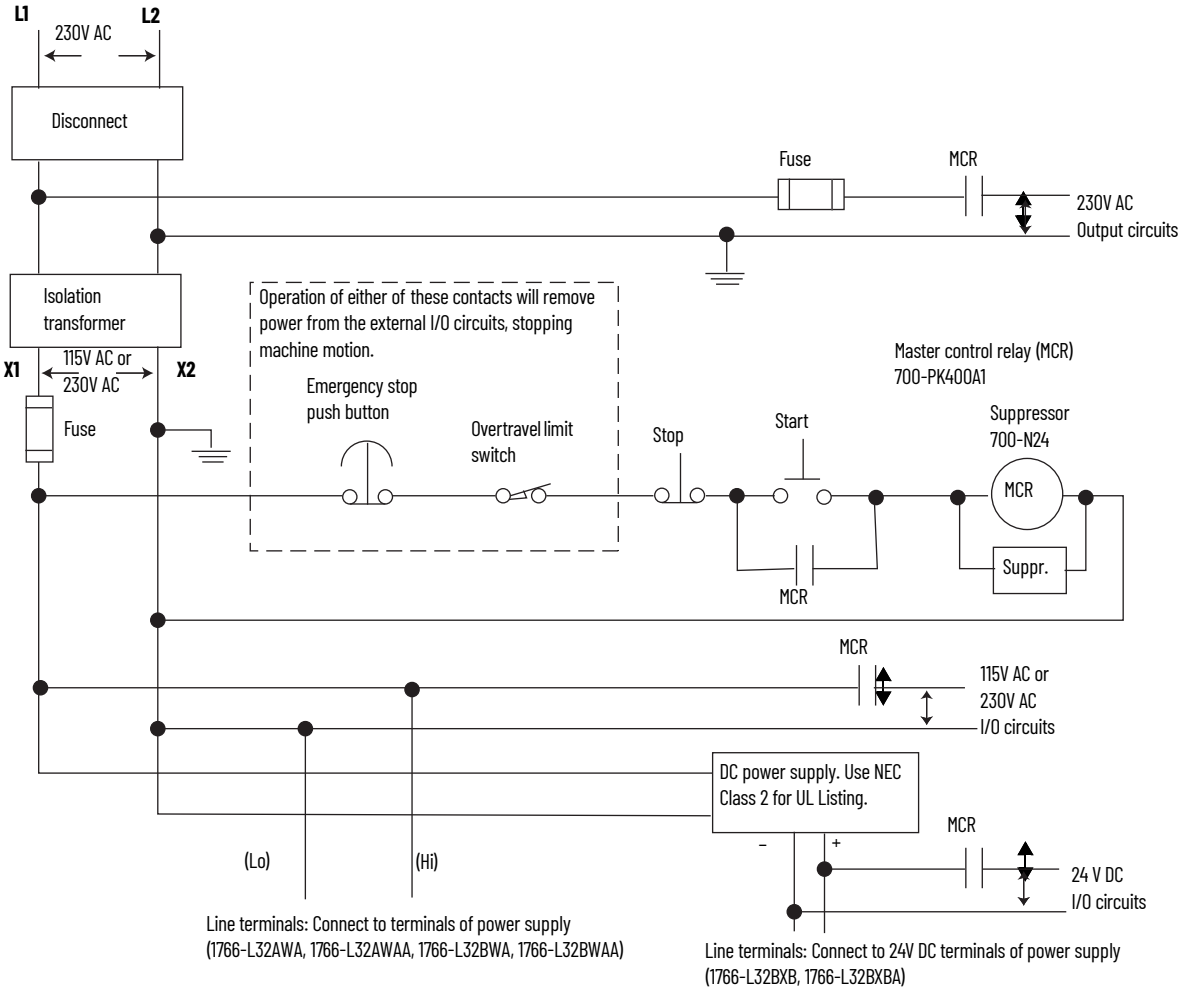


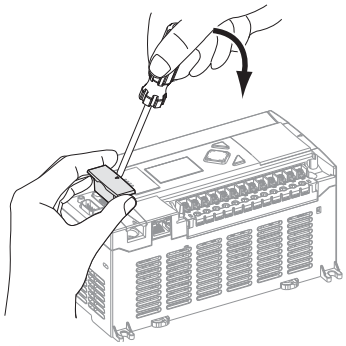
Figure 5 - Schematic (Using ANSI/CSA Symbols)



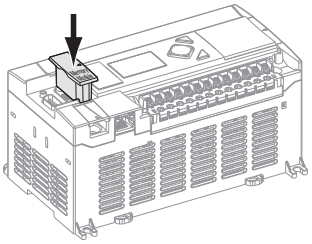
Install a Memory Module

To install the memory module, do as follows:

1. Remove the memory module port cover.



2. Align the connector on the memory module with the connector pins on the controller.



3. Firmly seat the memory module into the controller.