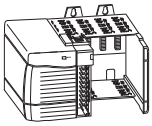
Select a ControlLogix System

Step 1
ControlLogix I/O Modules



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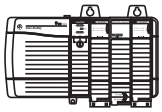
Select:
- I/O modules—Some modules have field-side diagnostics, electronic fusing, or individually isolated inputs/outputs
- A remote terminal block (RTB) or wiring system for each I/O module

Step 2
ControlLogix Integrated Motion



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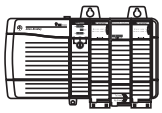
Select:
- An EtherNet/IP communication module for Integrated Motion
- Associated cables
- Select drives, motors, and accessories (use the Motion Analyzer software)

Step 3
ControlLogix Communication Modules



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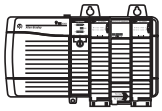
Select:
- Networks
- Communication modules
- Associated cables and network equipment
- Sufficient modules and cables if you are planning a redundant system

Step 4
ControlLogix Controllers



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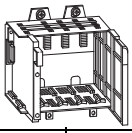
Select a controller:
- Standard ControlLogix controller
- Redundant ControlLogix controller
- Safety GuardLogix controller
- Extreme environment ControlLogix controller
- Standard Armor ControlLogix controller
- Safety Armor GuardLogix controller

Step 5
ControlLogix Chassis



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Select:
- A chassis with sufficient slots
- Slot fillers for empty slots

Step 6
ControlLogix Power Supplies

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Select:
- One power supply for each chassis, if you are using standard power supplies
- A power supply bundle if you are planning a redundant power supply system

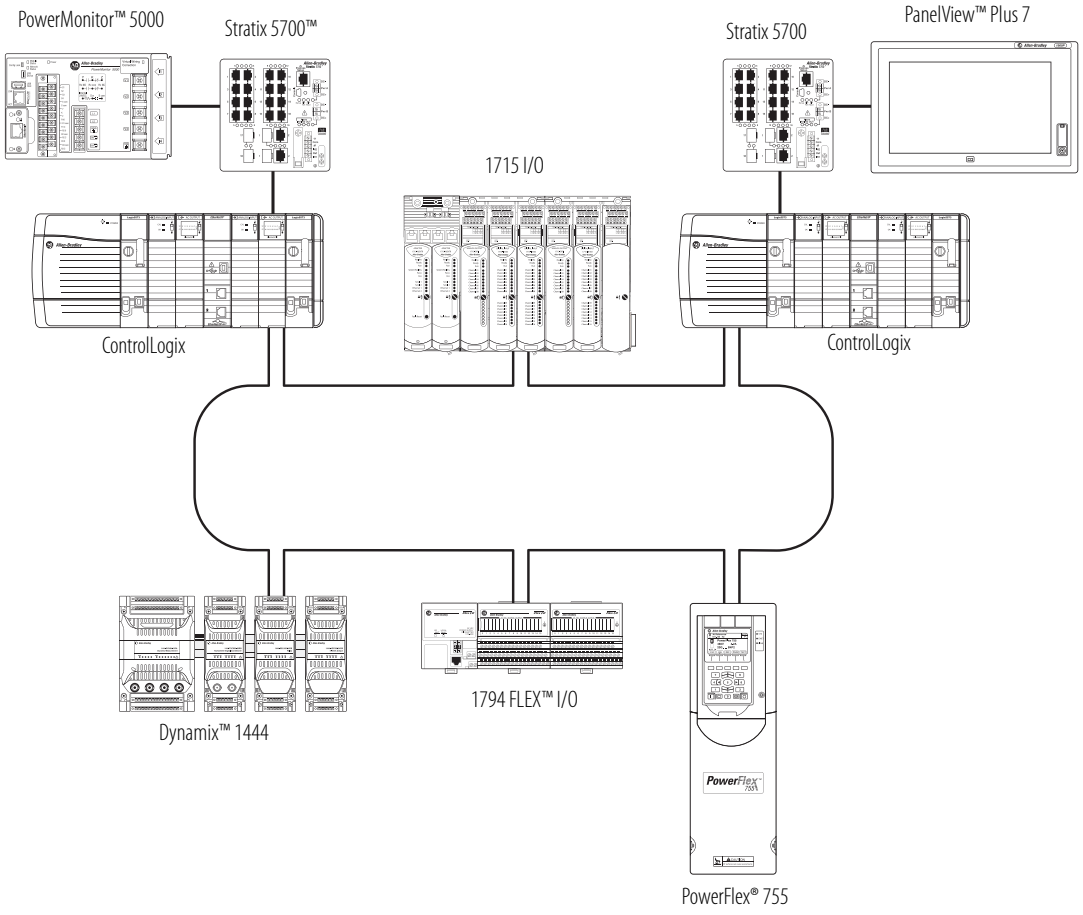
ControlLogix System Overview

The ControlLogix system provides discrete, drives, motion, process, and safety control together with communication and state-of-the-art I/O in a small, cost-competitive package. The system is modular, so you can design, build, and modify it efficiently with significant savings in training and engineering.

Example Configuration—ControlLogix System

A simple ControlLogix system consists of a standalone controller and I/O modules in one chassis. For a more comprehensive system, use the following:

- Multiple controllers in one chassis
- Multiple controllers joined across networks
- I/O in multiple platforms that are distributed in many locations and connected over multiple I/O links



Conformal Coating

A conformal coating solution is offered on select ControlLogix products. Conformal coating helps protect the assembly by providing a layer of protection against contaminants and humidity to extend product life in harsh, corrosive environments. Conformally coated products have a 'K' suffix at the end of the catalog number, such as 1756-A4K. Conformally coated, Allen-Bradley® products meet or exceed these requirements:

- ANSI/ISA 71.04.2013 G3 Environment (10-year exposure)
- IEC 61086-3-1 Class 2
- IPC-CC-830
- MIL-I-46058C
- EN600068-2-52 salt mist test, severity level 3

The most current list of conformally coated products can be found by contacting your local Rockwell Automation distributor, sales office, or at the following location:

http://www.ab.com/en/epub/catalogs/12762/2181376/2416247/360807/ControlLogix-System.html

ControlLogix-XT System

ControlLogix-XT™ (Extended Temperature) controllers function the same way as traditional ControlLogix controllers with an extended temperature range. The ControlLogix-XT products include control and communication system components that are conformally coated to extend product life in harsh, corrosive environments:

- The standard ControlLogix system can withstand temperature ranges from 0…60 °C (33…140 °F).
- When used independently, the ControlLogix-XT system can withstand temperature ranges from -25…70 °C (-13…158 °F).

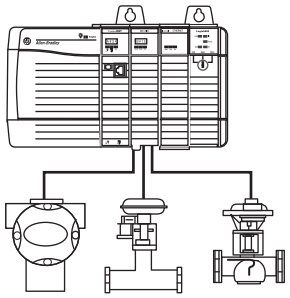
Analog Input Modules

Cat. No.	Inputs/Outputs	Range	Resolution	Removable Terminal Block
1756-IF6CIS	6 individually isolated inputs, current sourcing	0…20 mA (over-range indication when exceeded)	16 bits 0.34 μA/bit	1756-TBNH 1756-TBSH
1756-IF6I	6 individually isolated inputs	±10.5V 0…10.5V 0…5.25V 0…21 mA	16 bits 10.5V: 343 μV/bit 0…10.5V: 171 μV/bit 0…5.25V: 86 μV/bit 0…21 mA: 0.34 μA/bit	1756-TBNH 1756-TBSH
1756-IF8	8 single-ended inputs 4 differential inputs 2 high-speed differential inputs	±10V 0…10V 0…5V 0…20 mA	±10.25V: 320 μV/cnt (15 bits plus sign bipolar) 0…10.25V: 160 μV/cnt (16 bits) 0…5.125V: 80 μV/cnt (16 bits) 0…20.5 mA: 0.32 μA/cnt (16 bits)	1756-TBCH 1756-TBS6H
1756-IF8H	8 differential voltage or current inputs, HART interface	±10V 0…5V 1…5V 0…10V 0…20 mA 4…20 mA	16…21 bits	1756-TBCH 1756-TBS6H
1756-IF8I	8 individually isolated inputs, current or voltage	±10V 0…10V 0…5V 0…20 mA	24 bits ±10.5V (1.49 μV/count) 0…10.5V (1.49 μV/count) 0…5.25V (1.49 μV/count) 0…21 mA (2.99 nA/count)	1756-TBCH 1756-TBS6H
1756-IF8IH	8 individually isolated current inputs	0…20 mA 4…20 mA	16…21 bits	1756-TBCH 1756-TBS6H
1756-IF16	16 single-ended inputs 8 differential or 4 differential (high speed) inputs	±10V 0…10V 0…5V 0…20 mA	16 bits 10.5V: 343 μV/bit 0…10.5V: 171 μV/bit 0…5.25V: 86 μV/bit 0…21 mA: 0.34 μA/bit	1756-TBCH 1756-TBS6H
1756-IF16H	16 differential current inputs, HART interface	0…20 mA 4…20 mA	16…21 bits	1756-TBCH 1756-TBS6H

HART Smart Instrumentation

HART (Highway Addressable Remote Transducer) is an open protocol that is designed to connect analog devices. For HART connectivity, select products available from Rockwell Automation and our Encompass™ Partner.

Typical HART Configuration



- ControlLogix
- 1756-IF8H or
- 1756-OF8H

HART Devices

HART Interfaces

If your application has	Select	Description
Analog and HART connectivity in one module No external hardware is required to access HART signal HART commands can be transmitted as unscheduled messages Supports asset management software to HART device	1756-IF8H 1756-IF16H 1756-OF8H	Rockwell Automation® analog I/O modules
Analog and HART connectivity in one module No external hardware is required to access HART signal HART commands can be transmitted as unscheduled messages Supports asset management software to HART device Provides current isolation	1756-IF8IH 1756-OF8IH	Rockwell Automation isolated analog I/O modules
Data acquisition or control application with slow update requirements (such as a tank farm) No external hardware is required to access HART signal Does not connect directly to asset management software	MVI56-HART	ProSoft interface
Analog and HART in one module Instrumentation in hazardous locations (FLEX Ex™ modules) HART commands can be transmitted as unscheduled messages Directly connects asset management software to HART devices	1794 FLEX I/O 1797 FLEX Ex I/O	There are FLEX I/O and FLEX Ex modules that are designed for HART systems. These catalog numbers end in an H, such as 1797-IE8H.

Accessories—I/O Modules

1756 Removable Terminal Blocks

Removable terminal blocks (RTBs) provide a flexible interconnection between your plant wiring and 1756 I/O modules. The RTB plugs into the front of the I/O module. The type of module determines the RTB you need. You can choose screw-clamp or spring-clamp RTBs.

RTBs are not shipped with I/O modules. You must order them separately. The standard housing on the front of the wiring arm is not necessarily deep enough for 2.5 mm^2 (14 AWG) wiring. If you plan to use 2.5 mm^2 (14 AWG) wiring, also order the extended housing. For more information on Extended-Depth Housing, see Rockwell Automation Knowledgebase article #41488, Use of the 1756-TBE Extended Terminal Housing. You can access the article at: https://rockwellautomation.custhelp.com/ (login is required).

Attribute	1756-TBNH	1756-TBSH	1756-TBCH	1756-TBS6H	1756-TBE
Description	20-position NEMA screw-clamp removable block	20-pin spring-clamp removable terminal block with standard housing	36-pin cage-clamp removable terminal block with standard housing	36-pin spring-clamp removable terminal block with standard housing	Extended-depth terminal block housing
Screw torque	0.8…1 N•m 7…9 lb•in		0.4 N•m 4.4 lb•in		—

Wiring Systems

As an alternative to buying RTBs and connecting the wires yourself, you can buy a wiring system of the following:

- Interface modules (IFMs) that provide the I/O terminal blocks for Digital I/O modules. Use the prewired cables that match the I/O module to the IFM.
- Analog interface modules (AIFMs) that provide the I/O terminal blocks for analog I/O modules. Use the prewired cables that match the I/O module to the AIFM.
- I/O module-ready cables. One end of the cable assembly is an RTB that plugs into the front of the I/O module. The other end has individually color-coded conductors that connect to a standard terminal block.