

1756 ControlLogix Communication Modules Specifications

Standard ControlLogix Catalog Numbers

1756-EN2F, 1756-EN2T, 1756-ENBT, 1756-EWEB,
1756-CN2, 1756-CN2R, 1756-CNB, 1756-CNBR,
1756-DNB, 1756-DHRIO, 1756-RIO, 1756-DH485,
1756-SYNCH

ControlLogix-XT Catalog Numbers

1756-EN2TXT, 1756-CN2RXT, 1756-DHRIOXT

Linking Device Catalog Numbers

1757FFLD2, 1757-FFLD4, 1757-FFLDC2, 1757-FFLDC4

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Separate communication-interface modules are available for different networks. Install multiple communication-interface modules into the ControlLogix backplane to configure a gateway to bridge or route control and information data between different networks. Messages are sent directly from one communication interface module across the backplane to another. You can route a message through a maximum of four chassis (eight communication hops). You do not need a ControlLogix controller in the chassis.

Available Communication Modules

Network	Catalog Number	Description	Page
EtherNet/IP	1756-EN2F	EtherNet/IP communication bridge module, fiber, 256 Logix connections	5
	1756-EN2T	EtherNet/IP communication bridge module, copper, 256 Logix connections	5
	1756-ENBT	EtherNet/IP communication bridge module, copper, 128 Logix connections	5
	1756-EWEB	Ethernet web server module, 128 Logix connections	5
	1756-EN2TXT	ControlLogix-XT, EtherNet/IP communication bridge module, copper, 256 Logix connections,	7
ControlNet	1756-CN2, 1756-CN2R	ControlNet communication bridge module, 100 Logix connections	10
	1756-CNB, 1756-CNBR	ControlNet communication bridge module, 40...48 Logix connections	10
	1756-CN2RXT	ControlLogix-XT, ControlNet communication bridge module, 100 Logix connections	12
DeviceNet	1756-DNB	DeviceNet communication bridge module	15
Data Highway Plus	1756-DHRIO	Data Highway Plus/Remote I/O communication module	18
	1756-DHRIOXT	ControlLogix-XT, Data Highway Plus/Remote I/O communication module	20
Remote I/O	1756-DHRIO	Data Highway Plus/Remote I/O communication module	18
	1756-RIO	Remote I/O communication module	18
	1756-DHRIOXT	ControlLogix-XT, Data Highway Plus/Remote I/O communication module	20
Foundation Fieldbus	1757FFLD2, 1757-FFLD4	Foundation Fieldbus linking device bridges from an Ethernet network to either two or four H1 ports.	22
	1757-FFLDC2, 1757-FFLDC4	Foundation Fieldbus linking device bridges from a ControlNet network to either two or four H1 ports.	22
Serial	Built-in serial port	Compatible with RS-232 serial communication, supports the DF1 protocol	25
DH-485	Built-in serial port, 1756-DH485	Send and receive messages, does not support remote programming and monitoring	26
Synchlink	1756-SYNCH	SynchLink fiber-optic communication link	28

Environmental Specifications - 1756 Standard Network Modules

Attribute	1756-EN2F, 1756-EN2T, 1756-ENBT, 1756-EWEB, 1756-CN2, 1756-CN2R, 1756-CNB, 1756-CNBR, 1756-DNB, 1756-DHRIO, 1756-RIO, 1756-SYNCH
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, storage IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g at 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g

Environmental Specifications - 1756 ControlLogix-XT Network Modules

Attribute	1756-EN2TXT, 1756-CN2RXT, 1756-DHRIOXT
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-25...70 °C (-13...158 °F)
Temperature, storage IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g at 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g

Communication Connections

A ControlLogix system uses connections to establish communication links between devices. The types of connections include:

- controller-to-local I/O modules or local communication modules.
- controller-to-remote I/O or remote communication modules.
- controller-to-remote I/O (rack-optimized) modules.
- produced and consumed tags.
- messages.
- controller access by RSLogix 5000 programming software.
- controller access by RSLinx software for HMI or other applications.

You indirectly determine the number of connections the controller uses by configuring the controller to communicate with other devices in the system. The limit of connections may ultimately reside in the communication module you use for the connection. If a message path routes through a communication module, the connection related to the message also counts towards the connection limit of that communication module.

EtherNet/IP Network



The Ethernet Industrial (EtherNet/IP) network protocol is an open industrial-networking standard that supports both real-time I/O messaging and message exchange. The EtherNet/IP network uses off-the-shelf Ethernet communication chips and physical media.

If your application	Select this interface	Description
<ul style="list-style-type: none"> Controls I/O modules and drives Requires an adapter for distributed 1756 I/O on EtherNet/IP links Communicates with other EtherNet/IP devices (messages and HMI) Bridges EtherNet/IP links to route messages to devices on other networks 	1756-EN2F 1756-EN2T 1756-ENBT	<p>The EtherNet/IP communication module:</p> <ul style="list-style-type: none"> controls I/O and drives over an EtherNet/IP network. acts as an adapter for distributed I/O on remote EtherNet/IP links. routes messages to devices on other networks.
<ul style="list-style-type: none"> Provides control in environments where temperatures range from -20...70 °C (-4...158 °F). 	1756-EN2TXT	<p>The EtherNet/IP communication module:</p> <ul style="list-style-type: none"> controls I/O and drives over an EtherNet/IP network. acts as an adapter for distributed I/O on remote EtherNet/IP links. routes messages to devices on other networks.
<ul style="list-style-type: none"> Requires remote access via an Internet browser to tags in a local ControlLogix controller Communicates with other EtherNet/IP or generic Ethernet devices (messaging only; no I/O control) Bridges EtherNet/IP links to route messages to devices on other networks 	1756-EWEB	<p>The enhanced web-server module provides Internet browser access so you can monitor and modify data remotely via XML web pages. The web-server module supports:</p> <ul style="list-style-type: none"> data access (read and write) to ControlLogix controllers. bridging and routing of messages. custom Web pages. email capability. open socket services.

Technical Specifications - 1756 Standard EtherNet/IP Modules

Attribute	1756-EN2F	1756-EN2T	1756-ENBT	1756-EWEB
EtherNet/IP communication rate	100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Logix communication connections	256	256	128	128
TCP/IP communication connections	128	128	64	64
Current draw @ 5.1V DC	1000 mA	1000 mA	700 mA	700 mA
Current draw @ 24V DC	3 mA	3 mA	3 mA	3 mA
Power dissipation	5.1 W	5.1 W	3.65 W	3.65 W

Attribute	1756-EN2F	1756-EN2T	1756-ENBT	1756-EWEB
Isolation voltage	No isolation between USB and system	30V (continuous), Basic Insulation Type No isolation between USB and system Tested at 707V DC for 60 s, Ethernet to system	30 V (continuous), Basic Insulation Type Tested at 707V DC for 60 s, Ethernet to system	30 V (continuous), Basic Insulation Type Tested at 707V DC for 60 s, Ethernet to system
Slot width	1			
Module location	Chassis-based, any slot			
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17			
Power supply, standard	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B			
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2			
Ports	1 Ethernet fiber 1 USB 1.1	1 Ethernet RJ45 Category 5 1 USB 1.1	1 Ethernet RJ45 Category 5	1 Ethernet RJ45 Category 5
Ethernet cable	Multimode fiber, LC connector	802.3 compliant shielded or unshielded twisted pair		
USB cable	Samtec cable, PN RSP-119350	Samtec cable, PN RSP-119350	—	—
Wire category	2 - on communication ports ⁽¹⁾			
North American temperature code	T5	T5	—	—
Enclosure type rating	None (open-style)			

⁽¹⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756 Standard EtherNet/IP Modules

Certification ⁽¹⁾	1756-EN2F, 1756-EN2T	1756-ENBT, 1756-EWEB
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.	
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.	
ATEX	na	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection “n” (Zone 2)
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) 	
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions	
ODVA - EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications	
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations	

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Technical Specifications - 1756-EN2TXT EtherNet/IP Module

Attribute	1756-EN2TXT
EtherNet/IP communication rate	10/100 Mbps
Logix communication connections	256
TCP/IP communication connections	128
Current draw @ 5.1V DC	1000 mA
Current draw @ 24V DC	3 mA
Power dissipation	5.1 W
Power consumption	17.1 BTU/hr
Isolation voltage	30V (continuous), Basic Insulation Type No isolation between USB and system Tested at 707V DC for 60 s, Ethernet to system
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A45XT 1756-A7LXT
Power supply, standard	1756-PBXT
Power supply, redundant	None
Ports	1 Ethernet RJ45 Category 5 1 USB 1.1
Ethernet cable	802.3 compliant shielded or unshielded twisted pair
USB cable	Samtec cable, PN RSP-119350
Wire category	2 - on communication ports ⁽¹⁾
North American temperature code	T4A
IEC temperature code	T4
Enclosure type rating	None (open-style)

⁽¹⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756-EN2TXT EtherNet/IP Module

Certification ⁽¹⁾	1756-EN2TXT
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
ATEX	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" (Zone 2)
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
ODVA - EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications
TÜV	TÜV Certified for Functional Safety: up to and including SIL 2

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Accessories - Ethernet Network

Cat. No.	Description	Specifications
1585J-M8PBJM-x	Ethernet RJ45 patchcord x = 2 (2 m), 5 (5 m) or 10 (10 m)	8-conductor, Teal Riser PVC Cable (Flex Rated cable also available)
1585J-M8CC-H	RJ45 insulation displacement connector (IDC)	0.128...0.325 mm ² (26...22 AWG), Cat. 6, IDC, no tool required
1585J-M8CC-C	RJ45 crimp connector with boot, qty = 50 pieces	0.128...0.205 mm ² (26...24 AWG, Cat. 5e, requires crimp tool for assembly)
1585A-Jcrimp	Crimp tool	—
9300-RADES	Remote access dial-in kit	56 Kbps modem connection to devices on an Ethernet network, includes: <ul style="list-style-type: none"> • pre-configured modem • communication module • DIN rail mounting hardware • associated cables

Stratix Switches

To effectively manage real-time control and information flow throughout the manufacturing and IT enterprise, Rockwell Automation offers a full portfolio of industrial Ethernet switches and media, including a line of Stratix switches integrated with Cisco technology. The Stratix line of switches includes modular managed, fixed managed, and unmanaged switches.

Select the switch depending on the application and environment.

If your application	Select
<ul style="list-style-type: none"> Integrates enterprise and manufacturing environments Manages multicast traffic Requires diagnostics data Requires security options 	Stratix 8000 modular, managed switch
<ul style="list-style-type: none"> Integrates plant floor devices Manages multicast traffic Requires diagnostics data Requires security options 	Stratix 6000 fixed, managed switch
<ul style="list-style-type: none"> Requires easy set up and direct replacement of switches Is a small, isolated network 	Stratix 2000 unmanaged switch

Stratix Switch Specifications

Cat. No.	Ports per Module	Total Ports, max	Fiber Ports	Copper Ports	SFP Slots ⁽¹⁾	CompactFlash Memory	Power Requirements
1783-MS06T Stratix 8000 Base Module	6	Up to 26 ⁽²⁾	2 SFP slots which support 100 MB and 1 G multimode and singlemode fiber with LC connector	<ul style="list-style-type: none"> 4 10/100 ports 2 10/100/1000 ports 	2	Yes	24/48V DC
1783-MS10T Stratix 8000 Base Module	10			<ul style="list-style-type: none"> 8 10/100 ports 2 10/100/1000 ports 			
1783-MX08T Stratix 8000 Expansion Module	8		8 100 baseFX ports with LC connector	<ul style="list-style-type: none"> 8 10/100 ports 			
1783-MX08F Stratix 8000 Expansion Module	8			—			
1783-EMS04T Stratix 6000 Switch	4	4	—	4	—	No	8...48V DC
1783-EMS08T Stratix 6000 Switch	9	9	<ul style="list-style-type: none"> 1 G fiber SFPs 	8	1	No	
1783-US03T01F Stratix 2000 Switch	4	4	<ul style="list-style-type: none"> 1 fiber port 100 base LC, 1 Mbps fiber support 	3	—	No	10...35V DC
1783-US05T Stratix 2000 Switch	5	5	—	5	—	No	
1783-US06T01F Stratix 2000 Switch	7	7	<ul style="list-style-type: none"> 1 fiber port 100 base LC fiber port, 1 Mbps fiber support 	6	—	No	
1783-US08T Stratix 2000 Switch	8	8	—	8	—	No	

⁽¹⁾ When SFP is used, corresponding 10/100/1000 copper is disabled.

⁽²⁾ Maximum port counts require expansion ports. Two ports each can be used for SFP or 10/100/1000 copper.

ControlNet Network



The ControlNet network is an open, control network for real-time, high-throughput applications. The ControlNet network uses the Common Industrial Protocol (CIP) to combine the functionality of an I/O network and a peer-to-peer network providing high-speed performance for both functions. The ControlNet network gives you deterministic, repeatable transfers of all mission-critical control data in addition to supporting transfers of non-time-critical data. I/O updates and controller-to-controller interlocking always take precedence over program uploads and downloads and messaging.

If your application has	Select this interface
100 ControlNet connections per communication module	1756-CN2 1756-CN2R
Provides control in environments where temperatures range from -20...70 °C (-4...158 °F).	1756-CN2RXT
40...48 ControlNet connections per communication module	1756-CNB 1756-CNBR

Connect to Other Devices via a ControlNet Network

The RSLogix 5000 Enterprise Series software supports a generic ControlNet module that allows connections to ControlNet nodes for which there is no specific support currently available in the programming software. A module configured as a generic ControlNet module communicates with the controller in the form of input, output, status, and configuration tags.

For example, use the generic module configuration to set up communication between a ControlLogix controller and a 1203-CN1 ControlNet communication module. Then use the CIP generic MSG instruction type to send and receive messages from the 1203-CN1 module.

Technical Specifications - 1756 Standard ControlNet Modules

Attribute	1756-CN2	1756-CN2R	1756-CNB	1756-CNBR
Configuration	Standard	Redundant	Standard	Redundant
ControlNet communication rate	5 Mbps			
Logix communication connections	100	100	40...48	40...48
Connections supported, max.	128 ⁽¹⁾	128 ⁽¹⁾	64	64
Number of nodes, max	99			
Current draw @ 5.1V DC	1100 mA	1300 mA	970 mA	970 mA
Current draw @ 24V DC	3 mA	3 mA	1.7 mA	1.7 mA
Power dissipation	5.6 W	6.6 W	5.14 W	5.14 W
Thermal dissipation	19.1 BTU/hr	22.5 BTU/hr	17.5 BTU/hr	17.5 BTU/hr

Attribute	1756-CN2	1756-CN2R	1756-CNB	1756-CNBR
Isolation voltage	30V (continuous), Basic Insulation Type Tested at 500V AC for 60 s, ControlNet to system			
Slot width	1			
Module location	Chassis-based, any slot			
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17			
Power supply, standard	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B			
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2			
Ports	1 ControlNet BNC 1 ControlNet RJ45 1 USB 1.1	2 ControlNet BNC 1 ControlNet RJ45 1 USB 1.1	1 ControlNet BNC 1 ControlNet RJ45	2 ControlNet BNC 1 ControlNet RJ45
ControlNet cable	Quad shield RG6 coaxial cable			
USB cable	Samtec cable, PN RSP-119350	—	—	—
Wire category	2 - on communication ports ⁽²⁾			
North American temperature code	T4A	—	—	—
IEC temperature code	T4	T4	T4	T4
Enclosure type rating	None (open-style)			

⁽¹⁾ 128 connections are available for standard use. An additional three connections are reserved for redundant control.

⁽²⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756 Standard ControlNet Modules

Certification ⁽¹⁾	1756-CN2, 1756-CN2R, 1756-CNB, 1756-CNBR
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
ATEX	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" (Zone 2)
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
CI	ControlNet International conformance tested to ControlNet specifications
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Technical Specifications - 1756-CN2RXT ControlNet Module

Attribute	1756-CN2RXT
Configuration	Redundant
ControlNet communication rate	5 Mbps
Logix communication connections	100
Connections supported, max.	128 ⁽¹⁾
Number of nodes, max	99
Current draw @ 5.1V DC	1300 mA
Current draw @ 24V DC	3 mA
Power dissipation	6.6 W
Thermal dissipation	22.5 BTU/hr
Isolation voltage	30V (continuous), Basic Insulation Type Tested at 500V AC for 60 s, ControlNet to system
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A5XT, 1756-A7LXT
Power supply, standard	1756-PBXT
Power supply, redundant	None
Ports	2 ControlNet BNC 1 ControlNet RJ45 1 USB 1.1
ControlNet cable	Quad shield RG6 coaxial cable
USB cable	Samtec cable, PN RSP-119350
Wire category	2 - on communication ports ⁽²⁾
North American temperature code	T4A
IEC temperature code	T4
Enclosure type rating	None (open-style)

⁽¹⁾ 128 connections are available for standard use. An additional three connections are reserved for redundant control.

⁽²⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756-CN2RXT ControlNet Module

Certification ⁽¹⁾	1756-CN2RXT
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
ATEX	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" (Zone 2)
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
CI	ControlNet International conformance tested to ControlNet specifications
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Accessories - ControlNet Network

Cat. No.	Description
Taps	
1786-TPR	T-tap right angle
1786-TPS	T-tap straight
1786-TPYR	Y-tap right angle
1786-TPYS	Y-tap straight
Cables	
1786-CP	Programming cable to ControlNet RJ45 port
1786-RG6	ControlNet network, shield high flex cable
1756-RG6F	ControlNet network, quad shield high flex coax cable
Other	
1786-XT	ControlNet termination resistor
Repeaters	
1786-RPA	ControlNet modular repeater adapter
1786-RPCD	ControlNet coaxial hub repeater
1786-RPFRL	ControlNet fiber ring repeater, long
1786-RPFRXL	ControlNet fiber ring repeater, extra long
1786-RPFS	ControlNet fiber ring repeater, short
1786-RPFM	ControlNet fiber ring repeater, medium

DeviceNet Network



The DeviceNet network is an open, low-level network that provides connections between simple industrial devices (such as sensors and actuators) and higher-level devices (such as controllers and computers). The DeviceNet network uses the proven Common Industrial Protocol (CIP) to provide the control, configure, and data collection capabilities for industrial devices.

Technical Specifications - 1756-DNB DeviceNet Module

Attribute	1756-DNB
DeviceNet communication rate	125 Kbps (500 m max) 250 Kbps (250 m max) 500 Kbps (100 m max)
Number of nodes, max.	64
Current draw @ 5.1V DC	850 mA
Current draw @ 24V DC	3 mA
DeviceNet current range	11 ... 25V DC
DeviceNet current draw, max	60 mA
Power dissipation	5.8 W
Thermal dissipation	19.8 BTU/hr
Isolation voltage	30V (continuous), Basic Insulation Type No isolation between USB and system Tested at 500V AC for 60 s, DeviceNet to system
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17
Power supply, standard	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2
DeviceNet power	To comply with the CE low voltage directive (LVD), the DeviceNet network must be powered from a source compliant with the safety extra low voltage (SELV) or protected extra low voltage (PELV). To comply with UL restrictions, the DeviceNet network must be powered from a source compliant with Class 2 or limited voltage/current.
Ports	1 DeviceNet open-style 5-pin linear plug 1 USB 1.1
DeviceNet connector torque	0.56 ... 0.79 N•m (5 ... 7 lb•in)
USB cable	Samtec cable, PN RSP-119350
Wire size	802.3 compliant shielded or unshielded twisted pair
Wire category	2 - on communication ports ⁽¹⁾
North American temperature code	T4A
IEC temperature code	T4
Enclosure type rating	None (open-style)

⁽¹⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756-DNB DeviceNet Module

Certification ⁽¹⁾	1756-DNB
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
ATEX	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" (Zone 2)
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
ODVA	ODVA conformance tested to DeviceNet specifications

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Accessories - DeviceNet Network

Cat. No.	Description
KwikLink Lite flat media	KwikLink Lite flat media is a newer, ODVA-approved solution for wiring DeviceNet networks. Drop-lines for connecting nodes are added by using the KwikLink Lite two-piece connectors. This cable system supports the intermixing of DeviceNet cable types (thin-round with flat). All of the KwikLink Lite connectors provide insulation displacement technology with reduced assembly time.
KwikLink flat media	The KwikLink flat media system provides a modular cabling method with its flat 4-wire cable and Insulation Displacement Connectors (IDCs). The KwikLink system allows nodes to be added to the network without severing the trunkline. Cutting or stripping of the trunkline is eliminated, as is the need for predetermined cable lengths.
Round media	Round trunk cable is available in bulk spools or as pre-molded cordsets or patchcords in varying lengths. A wide variety of rugged, durable DeviceNet components is available for use in round trunk systems. Stainless steel versions of round cable system components are also available. <ul style="list-style-type: none"> • Thick-trunk round media systems use thick cable for maximum DeviceNet trunk line length. • Round media thin-trunk systems use thin cable to reduce maximum trunk line distances with a more compact and cost-effective installation for some applications. Thin-cable outer jacket material is TPE for additional chemical resistance.

For more information on selecting DeviceNet media, see the NetLinX Selection Guide, [publication NETS-SG001](#).

DH+ and Remote I/O Networks

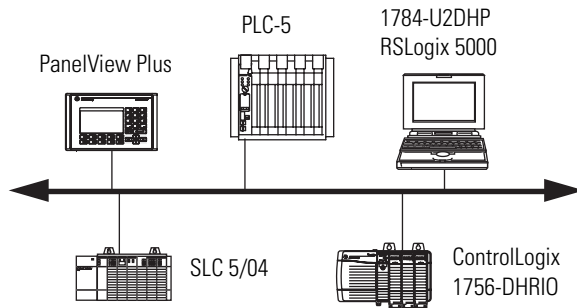


The Data Highway Plus network supports messaging between devices. The remote I/O link connects to remote I/O chassis and other intelligent devices.

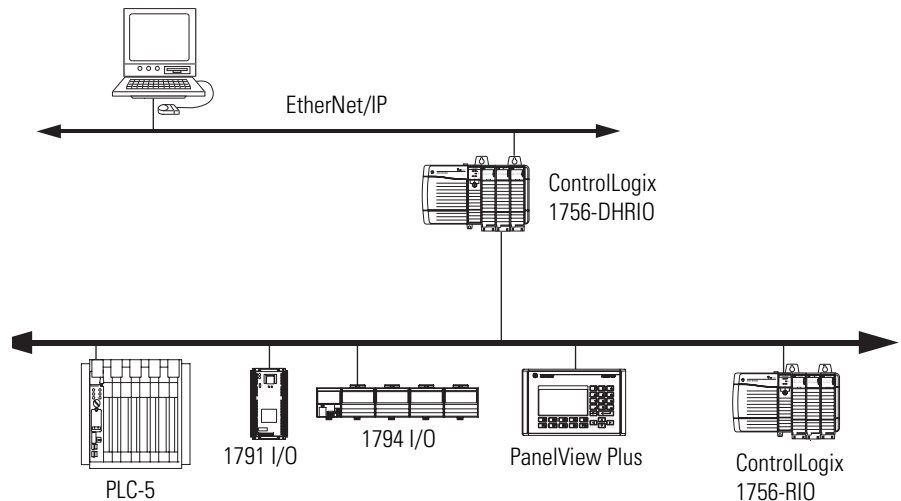
The 1756-DHRIO module supports messaging between devices on DH+ networks. The remote I/O functionality enables the module to act as a scanner for transferring digital and block-transfer data to and from remote I/O devices.

The 1756-RIO module can act as a scanner or adapter on a remote I/O network. In addition to digital and block-transfer data, the 1756-RIO module transfers analog and specialty data without message instructions.

Example Configuration - DH+ Network



Example Configuration - Remote I/O Network



Technical Specifications - 1756 Standard DH+ and Remote I/O Modules

Attribute	1756-DHRIO	1756-RIO
Communication rate	DH+: 57.6 Kbps RIO: 57.6 Kbps, 115.2 Kbps, 230.4 Kbps	RIO: 57.6 Kbps, 115.2 Kbps, 230.4 Kbps
DH+ communication connections	32 DH+ messages per DH+ channel	—
Remote I/O communication connections	32 logical rack connections per remote I/O channel 16 block-transfer connections per remote I/O channel	32 physical racks (0...76), any combination of rack size and block transfers
Connections supported, max	32	10 scheduled I/O 2 ms RPI
Current draw @ 5.1V DC	850 mA	650 mA
Current draw @ 24V DC	1.7 mA	5 mA
Power dissipation	4.5 W	4 W
Thermal dissipation	15.4 BTU/hr	13.7 BTU/hr
Isolation voltage	30V (continuous), Basic Insulation Type Type tested at 877V DC for 60 s, DHRIO to system backplane	30V (continuous), Basic Insulation Type Type tested at 877V DC for 60 s, DHRIO to system backplane
Slot width	1	1
Module location	Chassis-based, any slot	Chassis-based, any slot
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17
Power supply, standard	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2	1756-PA75R, 1756-PB75R, 1756-PSCA2
Ports	2, individually selectable for DH+ or remote I/O	1 for remote I/O
Cable	Belden 9463 0.519 mm ² (20 AWG)	Belden 9463 0.519 mm ² (20 AWG)
Screw terminal torque	0.5...0.6 N•m (4.4...5.3 lb•in)	0.5...0.6 N•m (4.4...5.3 lb•in)
Wire category	2 - on communication ports ⁽¹⁾	2 - on communication ports ⁽¹⁾
Enclosure type rating	None (open-style)	None (open-style)

⁽¹⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756 Standard DH+ and Remote I/O Modules

Certification ⁽¹⁾	1756-DHRIO	1756-RIO
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.	
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.	na
ATEX	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" (Zone 2)	na
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) 	
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions	na
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations	na

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Technical Specifications - 1756-DHRIOXT DH+ and Remote I/O Module

Attribute	1756-DHRIOXT
Communication rate	DH+: 57.6 Kbps RIO: 57.6 Kbps, 115.2 Kbps, 230.4 Kbps
DH+ communication connections	32 DH+ messages per DH+ channel
Remote I/O communication connections	32 logical rack connections per remote I/O channel 16 block-transfer connections per remote I/O channel
Connections supported, max	32
Current draw @ 5.1V DC	850 mA
Current draw @ 24V DC	1.7 mA
Power dissipation	4.5 W
Thermal dissipation	15.4 BTU/hr
Isolation voltage	30V (continuous), Basic Insulation Type Type tested at 877V DC for 60 s, DHRIO to system backplane
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A5XT, 1756-A7LXT
Power supply, standard	1756-PBXT
Power supply, redundant	None
Ports	2, individually selectable for DH+ or remote I/O
Cable	Belden 9463 0.519 mm ² (20 AWG)
Screw terminal torque	0.5 ... 0.6 N•m (4.4...5.3 lb•in)
Wire category	2 - on communication ports ⁽¹⁾
Enclosure type rating	None (open-style)

⁽¹⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756-DHRIOXT DH+ and Remote I/O Module

Certification ⁽¹⁾	1756-DHRIOXT
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
ATEX	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" (Zone 2)
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
TÜV	TÜV Certified for Functional Safety: up to and including SIL 2

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Accessories - DH+ and Remote I/O Networks

Cat. No.	Description	Specifications
1770-CD	Cable to connect communication module to DH+ network	Belden 9463 twinaxial
9300-RADKIT	Remote access dial-in kit	56 Kbps modem connection to devices on a DH+ network, includes: <ul style="list-style-type: none"> • pre-configured modem • communication module • DIN rail mounting hardware • associated cables

Foundation Fieldbus Network



Foundation Fieldbus is a communication network created by the Fieldbus Foundation. It is a protocol designed for robust, distributed control of process control applications. Devices connected by a Foundation Fieldbus network can be used for sophisticated, highly distributed process control.

If your application bridges from	Select	Description
EtherNet/IP	1757FFLD2 1757-FFLD4	The 1757-FFLDx linking device bridges from an Ethernet network to either two or four H1 ports. Each H1 port can support the recommended maximum 8 to 10 devices. Each H1 network can support a maximum of 16 publisher and 16 subscriber VCR connections.
ControlNet	1757-FFLDC2 1757-FFLDC4	The 1757-FFLDCx linking device bridges from a ControlNet network to either two or four H1 ports. Each H1 port can support the recommended maximum 8 to 10 devices. Each H1 network can support a maximum of 64 publisher and 64 subscriber VCR connections. The 1757-FFLDCx is compatible with ControlLogix redundancy and supports redundant ControlNet media.

Environmental Specifications - 1757 Foundation Fieldbus Modules

Attribute	Value
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, storage IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	5 g at 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	15 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g

Technical Specifications - 1757 Foundation Fieldbus Modules

Attribute	1757-FFLD2	1757-FFLD4	1757-FFLDC2	1757-FFLDC4
Foundation Fieldbus communication rate	31.25 Kbps			
EtherNet/IP communication rate	10/100 Mbps		—	
ControlNet communication rate	—		5 Mbps	

Attribute	1757-FFLD2	1757-FFLD4	1757-FFLDC2	1757-FFLDC4
Number of H1 networks per linking device, max	2 ⁽¹⁾	4 ⁽¹⁾	2 ⁽¹⁾	4 ⁽¹⁾
Number of Fieldbus devices per H1 network, max	16 (8...10 recommended)			
Number of Fieldbus devices per linking device, max	32	64	32	64
Current draw @ 24V DC	300 mA ⁽²⁾		450 mA ⁽³⁾	
Inrush current	1.5 A			
Power dissipation	—		9.6 W	
Isolation voltage	50V (continuous) Tested at 500V AC for 60 s, Ethernet to system backplane		50V (continuous), Basic Insulation Type Type tested at 500V AC for 60 s, Fieldbus to system backplane, Ethernet to system backplane, ControlNet to system backplane, and ControlNet Channel A to ControlNet Channel B	
Dimensions (HxWxD), approx.	138 x 168 x 87 mm (5.43 x 6.62 x 3.43 in.)		—	
Module location	DIN rail or panel			
Power supply	User-supplied 24V DC			
Ports	2 H1 FOUNDATION Fieldbus 1 Ethernet RJ45	4 H1 FOUNDATION Fieldbus 1 Ethernet RJ45	2 H1 FOUNDATION Fieldbus 1 ControlNet BNC	4 H1 FOUNDATION Fieldbus 1 ControlNet BNC
Wire category	3 - on power ports 2 - on communication ports ⁽⁴⁾		2 - on shielded Fieldbus ports 3 - on power ports 2 - on ControlNet ports ⁽³⁾	
Wire size	0.2...1 mm ² (26...16 AWG)		DC power connection: 0.2... 1.5 mm ² (26...16 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max Fieldbus connections: 0.8 mm ² (18 AWG) solid or stranded shielded twisted pair copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max	
Wire type	Copper			
Panel mount screws	M4 or #8 screws			
Panel mount screw torque	1.1...1.8 N•m (10...16 lb•in)			
North American temperature code	—		T4	
Enclosure type rating	None (open-style)			

⁽¹⁾ Each network defined as a Foundation Fieldbus 31.25 Kbps H1 network.

⁽²⁾ 24V DC (±20%).

⁽³⁾ 24V DC (±10%).

⁽⁴⁾ Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1757 Foundation Fieldbus Modules

Certification ⁽¹⁾	1757-FFLD2, 1757-FFLD4	1757-FFLDC2, 1757-FFLDC4
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.	
ATEX	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" (Zone 2)	na
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) 	
CI	na	ControlNet International conformance tested to ControlNet specifications
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions	
FF	Foundation Fieldbus Test Campaign #s H1-CT0060, HTK-000900	
ODVA - EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications	na
*		

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Accessories - Foundation Fieldbus Network

Cat. No.	Description
DIN rail	35 x 7.5 or 35 x 15 DIN (EN 50 022), zinc-plated yellow chromate steel

Serial Network

The controller serial port is compatible with RS-232 serial communication. The serial port supports the DF1 protocol to communicate with other devices on the serial link.

Use this DF1 mode	For
Point-to-point	Communication between a controller and other DF1-compatible devices using DF1 full-duplex protocol.
DF1 radio modem	SCADA applications where controllers exchange data via radio transmission.
DF1 master	Control of polling and message transmission between the master and each slave using DF1 half-duplex polled protocol.
DF1 slave	Using the controller as a slave station in a master/slave serial network using DF1 half-duplex protocol.
User mode (ASCII)	Communication between a controller and an ASCII device, such as a bar code reader.

The serial port is Channel 0 and is fully isolated. The serial channel supports DF1, DH-485, and ASCII protocols.

DH-485 Network

On the DH-485 network, the controller can send and receive messages to and from other controllers on the network. The DH-485 connection does support remote programming and monitoring via RSLogix 5000 software. However, excessive traffic over a DH-485 connection can adversely affect overall performance and can lead to timeouts and loss in RSLogix 5000 configuration performance.

Important: Use Logix5000 controllers on DH-485 networks only when you want to add controllers to an existing DH-485 network. For new applications with Logix5000 controllers, networks in the NetLinx open architecture are the recommended networks.

You need a 1761-NET-AIC converter for each controller you want to put on the DH-485 network. You can have two controllers per one 1761-NET-AIC converter, but you need a different cable for each controller. Connect one controller to port 1 (9-pin connector) and one controller to port 2 (mini-DIN connector).

To connect to this port	Use this cable
Port 1 DB-9 RS-232, DTE connection	1747-CP3, 1761-CBL-AC00
Port 2 mini-DIN 8 RS-232 connection	1761-CBL-AP00, 1761-CBL-PM02

Technical Specifications - 1756-DH485 Module

Attribute	1756-DH485
Communication rate	19.2 Kbps 9600 Kbps
Current draw @ 5.1V DC	850 mA
Current draw @ 24V DC	1.7 mA
Power dissipation	4.5 W
Thermal dissipation	15.4 BTU/hr
Isolation voltage	50V (continuous) Tested at 750V DC for 60 s
Slot width	1
Module location	Chassis
Power supply, standard	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2
Ports	2 DH-485 9-pin, D-shell
Wire size	20 AWG (0.519 mm ²)
Wire category	2 - on communication ports ⁽¹⁾
Wire type	Belden 9463 twinaxial

Attribute	1756-DH485
Screw terminal torque	0.5...0.6 N•m (4.4...5.3 lb•in)
Enclosure type rating	None (open-style)
Certifications†	c-UL-us, CE, CSA, C-Tick

(1) Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, [publication 1770-4.1](#).

Certifications - 1756-DH485 Module

Certification ⁽¹⁾	1756-DH485
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Accessories - DH-485 Network

Cat. No.	Description	Specifications
1747-CP3	9-pin D-shell, straight; 9-pin D-shell, right angle	3 m (9.8 ft)
1761-CBL-AC00	9-pin D-shell, right angle; 9-pin D-shell, right angle	45 cm (17.7 in.)
1761-CBL-AP00	9-pin D-shell, right angle; 8-pin mini-DIN	45 cm (17.7 in.)
1761-CBL-PM02	9-pin D-shell, straight; 8-pin mini-DIN	2 m (6.5 ft)
1761-NET-AIC	Advanced Interface Converter (AIC+) connects each channel on the 1756-DH485 module to the DH-485 network	<ul style="list-style-type: none"> • 20.4...28.8V DC power source required • Typical 120 mA 24V DC current draw
9300-RADKIT	Remote access dial-in kit	56 Kbps modem connection to devices on a DH+ network, includes: <ul style="list-style-type: none"> • Pre-configured modem • Communication module • DIN rail mounting hardware • Associated cables

SynchLink Communication

The SynchLink module provides time synchronization and data broadcasting capabilities for distributed motion and coordinated drive control. The 1756-SYNCH SynchLink module connects a ControlLogix chassis to a SynchLink fiber-optic communication link. The module:

- coordinates Coordinated System Time across multiple ControlLogix chassis.
- moves a limited amount of data from one chassis to another at a high speed.
- lets one controller consume motion axes data from a controller in another chassis.

Technical Specifications - 1756-SYNCH Module

Attribute	1756-SYNCH
SynchLink data rate	5 Mbps
Operating wavelength	650 nm (red)
Type of communication	Synchronous
Frame period	50 μ s
Frame parameters	3 Flags - 3 bytes Control field - 1 byte Data field - 24 bytes CRC field - 2 bytes
Current draw @ 5.1V DC	1200 mA
Current draw @ 24V DC	3 mA
Power dissipation	6.19 W
Thermal dissipation	21.1 BTU/hr
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17
Power supply, standard	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B
Power supply, redundant	1756-PA1756-PA75R, 1756-PB75R, 1756-PSCA2
Ports	2 fiber optic
Cable fiber type	200/230 micron HCS (Hard Clad Silica)
Cable fiber termination type	Versalink V-System
Cable length	1...300 m
Enclosure type rating	None (open-style)

Certifications - 1756-SYNCH Module

Certification ⁽¹⁾	1756-SYNCH
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions

⁽¹⁾ When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Accessories - SynchLink Network

Cat. No.	Description
1403-CFxxx	Fiber optic cable assembly (Rockwell Automation)
HCP-M0200T V01RK	Lucent Technologies 200 μ m simplex cable

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your product up and running.

United States	1.440.646.3434 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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Publication 1756-TD003A-EN-E - May 2009

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