Technical Data

Original Instructions

1756 ControlLogix Communication Modules Specifications

Standard ControlLogix Communication Modules	1756-CN2, 1756-CN2R, 1756-CNB, 1756-CNBR, 1756-DNB, 1756-DHRIO, 1756-EN2F, 1756-EN2T, 1756-EN2TP, 1756-EN2TR, 1756-EN3TR, 1756-EN4TR, 1756-ENBT, 1756-EWEB, 1756-RIO, 1756-SYNCH, 1756-TIME
Harsh Environment ControlLogix Communication Modules	1756-CN2K, 1756-CN2RK, 1756-CNBK, 1756-CNBRK, 1756-DNBK, 1756-DHRIOK, 1756-EN2FK, 1756-EN2TK, 1756-EN2TPK, 1756-EN2TRK, 1756-EN3TRK, 1756-EN4TRK, 1756-ENBTK, 1756-EWEBK 1756-CN2RXT, 1756-DHRIOXT, 1756-EN2TXT, 1756-EN2TPXT, 1756-EN2TRXT, 1756-EN4TRXT

Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Added 1756-EN4TRXT/B information	4...11
Updated CCC certification information	Throughout
Moved 1756-ENBT Module information to the Legacy Modules section	41...43

Available Communication Modules

Network	Cat. No.	Description	Page
EtherNet/IP™	1756-EN2F, 1756-EN2T, 1756-EN2TK, 1756-EN2TP, 1756-EN2TPK, 1756-EN2TR, 1756-EN2TRK, 1756-EN3TR, 1756-EN3TRK, 1756-EN4TR, 1756-EN4TRK	EtherNet/IP bridge	4
	1756-EN2TPXT, 1756-EN2TXT, 1756-EN2TRXT, 1756-EN4TRXT	ControlLogix-XT™ Ethernet/IP bridge	4
DeviceNet®	1756-DNB	DeviceNet bridge	15
Data Highway Plus™	1756-DHRIO	Data Highway Plus/Remote I/O module	18
	1756-DHRIOXT	ControlLogix-XT, Data Highway Plus/Remote I/O module	18
Remote I/O	1756-DHRIO	Data Highway Plus/Remote I/O module	18
	1756-RIO/B	Remote I/O module	18
	1756-DHRIOXT	ControlLogix-XT, Data Highway Plus/Remote I/O module	18
SynchLink™	1756-SYNCH	SynchLink fiber-optic communication link	25

IMPORTANT When a ControlLogix product that is rated for harsh environments (corrosive atmosphere, extended temperature, etc.) is used in a system with other ControlLogix products that have lower specification values, the system is derated to the lowest common value.

EXAMPLE: If the maximum operating temperature specification found in the Technical Data for your ControlLogix-XT module is 70 °C (158 °F) and you pair it with a ControlLogix chassis that is temperature rated to 60 °C (140 °F), your system is derated to 60 °C (140 °F).

To ensure that your system is equipped for harsh environments, compare the corrosive atmosphere, temperature, and other specifications found in the Technical Data publication for each product.

Communication Connections

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

- 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 with the Studio 5000® environment
- Controller access with 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 communication module you use defines the connection limit. If a message path routes through a communication module, the connection that is 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 real-time I/O messaging and message exchange. It uses off-the-shelf Ethernet communication chips and physical media.

For these requirements	Select this interface
Control I/O modules and drives Act as an adapter for I/O on remote EtherNet/IP links Communicate with other EtherNet/IP devices (messages and HMI) Bridge EtherNet/IP links to route messages to devices on other networks	1756-EN2F, 1756-EN2FK 1756-EN2T, 1756-EN2TK, 1756-EN2TXT 1756-EN2TP, 1756-EN2TPK, 1756-EN2TPXT 1756-EN2TR, 1756-EN2TRK, 1756-EN2TRXT 1756-EN4TR, 1756-EN4TRK, 1756-EN4TRXT
Support Device Level Ring (DLR) and linear topologies	1756-EN2TR, 1756-EN2TRK, 1756-EN2TRXT 1756-EN3TR, 1756-EN3TRK 1756-EN4TR, 1756-EN4TRK, 1756-EN4TRXT
Support Parallel Redundancy Protocol (PRP)	1756-EN2TP, 1756-EN2TPK, 1756-EN2TPXT 1756-EN4TR(1), 1756-EN4TRK(1), 1756-EN4TRXT(1)
Support redundant adapters(2)	1756-EN4TR, 1756-EN4TRK, 1756-EN4TRXT
Provide control in environments where temperatures range from -25...+70 °C (-13...+158 °F)	1756-EN2TPXT, 1756-EN2TRXT, 1756-EN2TXT, 1756-EN4TRXT
Secure access to a control system from within the plant network	1756-EN4TR, 1756-EN4TRK, 1756-EN4TRXT

(1) These modules support PRP with revision 4.001 and higher firmware.
(2) Redundant adapters require revision 3.x and higher firmware.

For more information on redundant adapters and Ethernet, see the ControlLogix EtherNet/IP Network User Manual, publication 1756-UM004.

EtherNet/IP Network Specifications

Table 1 - ControlLogix EtherNet/IP Connections Specifications(1)

Cat. No.	Connections		CIP Unconnected Messages (backplane + Ethernet)
	TCP	CIP(2)	
1756-EN2F	128	256	128 + 128
1756-EN2T	128	256	128 + 128
1756-EN2TP	128	256	128 + 128
1756-EN2TR	128	256	128 + 128
1756-EN3TR	128	256	128 + 128
1756-EN4TR	512	1000 I/O 528 (3)	256+256

(1) There are 1000 CIP™ I/O connections and 528 CIP messaging connections.
(2) CIP connections can be used for all explicit or all implicit applications. For example, a 1756-ENBT module has a total of 128 CIP connections that can be used in any combination.
(3) There are 1000 explicit connections and 528 implicit connections.

Table 2 - ControlLogix EtherNet/IP Data Specifications(1)

Cat. No.	Produced/Consumed Tags		Socket Services	SNMP Support (password required)	Duplicate IP Detection (starting revision)
	Number of Multicast Tags, Max(2)	Unicast Available in RSLogix 5000 Software			
1756-EN2F	32	Version 16.03.00 or later	Yes	Yes	All Revisions
1756-EN2T		Version 16.03.00 or later	Yes		
1756-EN2TP		Version 24.00.00 or later	Yes		
1756-EN2TR		Version 17.01.02 or later	Yes		
1756-EN3TR		Version 18.02.00 or later	Yes		
1756-EN4TR		Version 24.00.00 or later	Yes		

(1) Includes the K and XT harsh environment catalog numbers.
(2) Each controller can send a maximum of 32 multicast produced tags to one single consuming controller. If these same tags are sent to multiple consumers, the maximum number is 31.

Table 3 - ControlLogix EtherNet/IP Specifications[1]

Cat. No.	Firmware Revision	RSLogix 5000® Software Version	RSLinx® Software Version	Packet Rate Capacity (packets/ second)[2]		Support for Extended Environment[3]	Integrated Motion on the EtherNet/IP Network Axes
				I/O	HMI/MSG		
1756-EN2F	2.x	15.02.00 or later	2.51 or later	10,000	2000	No	–
	3.6 or later	18.02.00 or later[4]		25,000[5]			Up to 8 axes supported[5]
1756-EN2T	2.x or earlier	15.02.00 or later	2.51 or later	10,000		No	–
	3.6 or later	18.02.00 or later[4]		25,000[5]			Up to 8 axes supported[5]
1756-EN2TXT	2.x	15.02.00 or later	2.51 or later	10,000		Yes	–
	3.6 or later	18.02.00 or later[4]		25,000[5]			Up to 8 axes supported[5]
1756-EN2TP	Any	24.00.00 or later[4]	4.10 or later	25,000[5]		No	Up to 8 axes supported[5]
1756-EN2TPXT	10.x or later	24.00.00 or later	4.10 or later	25,000[5]		Yes	Up to 8 axes supported[5]
1756-EN2TR	2.x	17.01.02 or later	2.55 or later	10,000		No	–
	5.x or later	18.02.00 or later[4]	2.56 or later	25,000[5]			Up to 8 axes supported[5]
1756-EN2TRXT	5.028 or later	20.01.00 or later	2.56 or later	25,000[5]		Yes	Up to 8 axes supported[5]
1756-EN3TR	3.6 or later	18.02.00 or later[4]	2.56 or later	25,000[5]		No	Up to 128 axes supported[5]
1756-EN4TR	Any	24.00.00 or later[6]	4.10 or later	50,000 without CIP Security™ 25,000 with integrity 15,000 with integrity and confidentiality	3700 without CIP Security 2700 with integrity 1700 with integrity and confidentiality	No	Up to 256 axes supported[5]
1756-EN4TRXT	Any	24.00.00 or later[6]	4.10 or later	50,000 without CIP Security 25,000 with integrity 15,000 with integrity and confidentiality	3700 without CIP Security 2700 with integrity 1700 with integrity and confidentiality	Yes	Up to 256 axes supported[5]

(1) Includes the K conformal coating catalog numbers.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.
(3) Module operates in a broad temperature spectrum, -25…+70 ºC (-13…+158 ºF), and meets ANSI/ISA-S71.04-1985 Class G1, G2 and G3, as well as cULus, Class 1 Div 2, C-Tick, CE, ATEX Zone 2 and SIL 2 requirements for increased protection against salts, corrosives, moisture/condensation, humidity, and fungal growth.
(4) This version is required to use CIP Sync™ technology, Integrated Motion on the EtherNet/IP Network, or Exact Match keying.
(5) This value assumes the use of a 1756-L8x or 1756-L7x ControlLogix controller. For a 1756-L6x ControlLogix controller, see ControlLogix Controllers User Manual, publication 1756-UM001.
(6) CIP Security requires FactoryTalk® Linx version 6.11.00 or later.

Table 4 - Technical Specifications - 1756 EtherNet/IP Modules[1]

Attribute	1756-EN2F	1756-EN2T, 1756-EN2TP	1756-EN2TR, 1756-EN3TR	1756-EN4TR
EtherNet/IP communication rate	100 Mbps, no auto-negotiation	10/100 Mbps		10/100 Mbps 1 Gbps
Current draw @ 5.1V DC	1.2 A	1 A		1.2 A
Current draw @ 24V DC	3 mA			
Power dissipation	6.2 W	5.1 W		6.12 W
Thermal dissipation	21.28 BTU/hr	17.4 BTU/hr		20.9BTU/Hr
Isolation voltage	30V (continuous), basicinsulation type, USB to backplane Type tested at 980V AC for 60 s Compliant and tested according to IEC/UL 61010-1	30V (continuous), basic insulation type, Ethernet to backplane, USB to Backplane, and USB to Ethernet[2] Type tested at 980V AC for 60 s Compliant and tested according to IEC/UL 61010-1		30V (continuous), basic insulation type, Ethernet to backplane, USB to backplane, and USB to Ethernet Type tested at 860V AC for 60 s Compliant and tested according to IEC/UL 61010-1
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, 1756-PA75, 1756-PB72, 1756-PB75, 1756-PC75, 1756-PH75			
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2			
Ethernet port	1 Ethernet fiber	2 Ethernet RJ45 Category 5		2 Ethernet RJ45 Category 5E
Ethernet cable	Multimode fiber, LC connector	802.3 compliant shielded or unshielded twisted-pair		
USB port[3]	USB full speed (12 Mbps)			
Wiring category[4]	3 - on USB ports	2 - on Ethernet ports 3 - on USB ports		
Temperature code	T4			
Enclosure type rating	None (open-style)			
Transmitter launch power at Beginning of Life (BOL), min Allow -1 dB at End of Life (EOL)	-19 dBm into 62.5/125 µm fiber, — = 0.275 -22.5 dBm into 50/125 µm fiber, — = 0.20	—		

(1) Includes the K conformal coating catalog numbers.
(2) Applies only to these modules/series: 1756-EN2T/D, 1756-EN2TR/C, 1756-EN3TR/B.
(3) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(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.

Table 5 - Environmental Specifications - 1756 EtherNet/IP Modules[1]

Attribute	1756-EN2F	1756-EN2T, 1756-EN2TP	1756-EN2TR, 1756-EN3TR	1756-EN4TR
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 °C < Ta < 60 °C (32 °F < Ta < 140 °F)			Series C Chassis: 0 ≤ Ta ≤ +60 °C (+32 ≤ Ta ≤ +140 °F) Series B Chassis: 0 ≤ Ta ≤ +50 °C (+32 ≤ Ta ≤ +122 °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 °C< Ta < 85 °C (-40 °F < Ta < 185 °F)			
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing			
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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)	30 g	30 g[2]	30 g[2]	30 g
Emission CISPR 11 (IEC 61000-6-4)	Class A			
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges			
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...6000 MHz		
EFT/B immunity IEC 61000-4-4	—	±3 kV at 5 kHz on Ethernet ports[2]		±3 kV at 5 kHz on Ethernet ports
Surge transient immunity IEC 61000-4-5	—	±2 kV line-earth (CM) on Ethernet ports		
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz			

(1) Includes the K conformal coating catalog numbers.
(2) Applies only to these modules/series: 1756-EN2T/D, 1756-EN2TR/C,1756-EN3TR/B.

Table 6 - Certifications - 1756 EtherNet/IP Modules[1]

Certification[2]	1756-EN2T 1756-EN2TP	1756-EN2TR, 1756-EN3TR	1756-EN2F	1756-EN4TR
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.			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 2014/30/EU EMC Directive, compliant with: • 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)			
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions			
ATEX	European Union 2014/34/EU ATEX Directive, compliant with the following: • EN IEC 60079-0 General Requirements; EN 60079-7 Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc • UL 22 ATEX 2818X			
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107			
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment			
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations			
IECEx	–		IECEx System, compliant with the Standards IEC 60079-0, General Requirements, and IEC 60079-7, Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc IECEx UL 22.0063X	
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3			
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications			
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements			
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products			

(1) Includes the K conformal coating catalog numbers.
(2) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Table 7 - Technical Specifications - 1756 EtherNet/IP-XT Modules

Attribute	1756-EN2TXT, 1756-EN2TRXT, 1756-EN2TPXT	1756-EN4TRXT
EtherNet/IP communication rate	10/100 Mbps	10/100 Mbps 1 Gbps
Logix communication connections	256	1000 I/O 528 (1)
TCP communication connections	128	512
Current draw @ 5.1V DC	1 A	1.2 A
Power dissipation	5.1 W	6.12 W
Thermal dissipation	17.4 BTU/hr	20.9BTU/Hr
Isolation voltage	30V (continuous), Basic Insulation Type, Ethernet to Backplane, USB to Backplane, and USB to Ethernet Compliant and tested according to IEC/UL 61010-1	
Slot width	1	
Module location	Chassis-based, any slot	
Chassis	1756-A7XT/C, 1756-A10XT/C, 1756-A7ZXT, 1756-A10ZXT	
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA75XT	
Power supply, redundant	1756-PAXTR, 1756-PBXTR	
Ethernet port	2 Ethernet RJ45 Category 5	
Ethernet cable	802.3 compliant shielded or unshielded twisted-pair	
USB port(2)	USB full speed (12 Mbps)	
Wiring category (3)	2 - on Ethernet ports 3 - on USB ports	
Temperature code	T4	
Enclosure type rating	None (open-style)	

(1) There are 1000 CIP I/O connections and 528 CIP messaging connections.
(2) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(3) 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.

Table 8 - Environmental Specifications - 1756 EtherNet/IP-XT Module

Attribute	1756-EN2TXT, 1756-EN2TRXT, 1756-EN2TPXT, 1756-EN4TRXT/A	1756-EN4TRXT/B
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 ≤Ta ≤ +70 °C (-13 ≤ Ta ≤ +158 °F) -25 ≤Ta ≤ +70 °C (-13 ≤ Ta ≤ +158 °F)	
Temperature, nonoperating 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 damp heat)	5...95% noncondensing	
Conformal Coated	Yes	
Corrosive Atmosphere • ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	Severity Level G3[1] per ANSI/ISA 71.04–2013, Airborne Contaminants—Gases Severity Level CX[1][2] per IEC 60721-3-3:2019, Chemically Active Substances	–
• ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds	–	Severity Level GX[3][4] per ANSI/ISA 71.04–2013, Airborne Contaminants—Gases Severity Level CX[3] per IEC 60721-3-3:2019, Chemically Active Substances
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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)	30 g	
Emissions CISPR 11 (IEC 61000-6-4)	Class A	
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...6000 MHz	
EFT/B immunity IEC 61000-4-4	±3 kV at 5 kHz on Ethernet ports (1756-EN2TXT/D, 1756-EN2TRXT/C, and 1756-EN4TRXT only)	
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports	
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz	

(1) Port plugs/covers must remain installed in unused ports at all times during storage and operation for the product to maintain its corrosive atmosphere rating.
(2) Up to 9.6 microns per year, corrosion rate of copper.
(3) Port plugs/covers must remain installed in unused ports at all times, once the factory packaging seal is broken, for the product to maintain its corrosive atmosphere rating.
(4) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

Table 9 - Certifications - 1756 EtherNet/IP-XT Module

Certification[1]	1756-EN2TXT, 1756-EN2TRXT, 1756-EN2TPXT	1756-EN4TRXT
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.	
CE	European Union 2014/30/EU EMC Directive, compliant with the following: • 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)	
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions	
ATEX	European Union 2014/34/EU ATEX Directive, compliant with the following: • EN 60079-7; Explosive Atmospheres, Protection “e” • EN 60079-0; General Requirements II 3 G Ex EC IIC T4 Gc	
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107	
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment	
IECEx	IECEx System, compliant with the Standards IEC 60079-0, General Requirements, and IEC 60079-7, Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc IECEx UL 22.0063X	
FM	–	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3	
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications	
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements	
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products	

(1) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

EtherNet/IP Module Diagrams

Figure 1 - 1756-EN2T

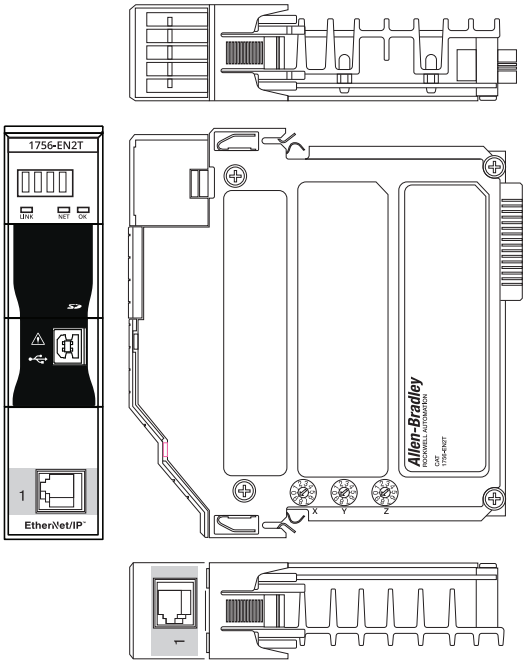


Figure 2 - 1756-EN2TP

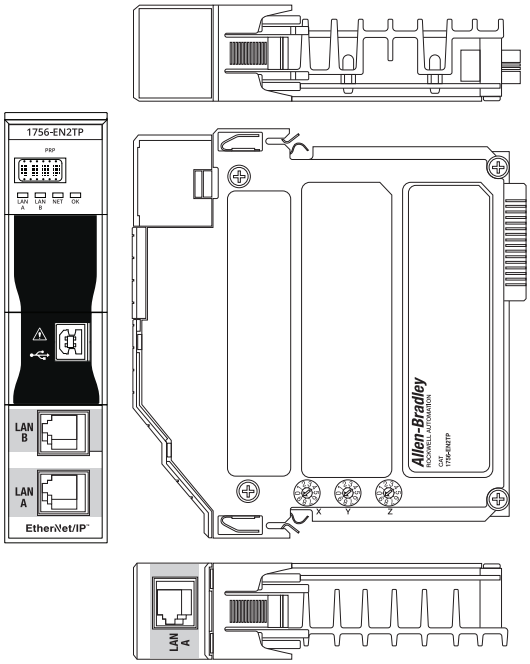


Figure 3 - 1756-EN2TR, 1756-EN3TR

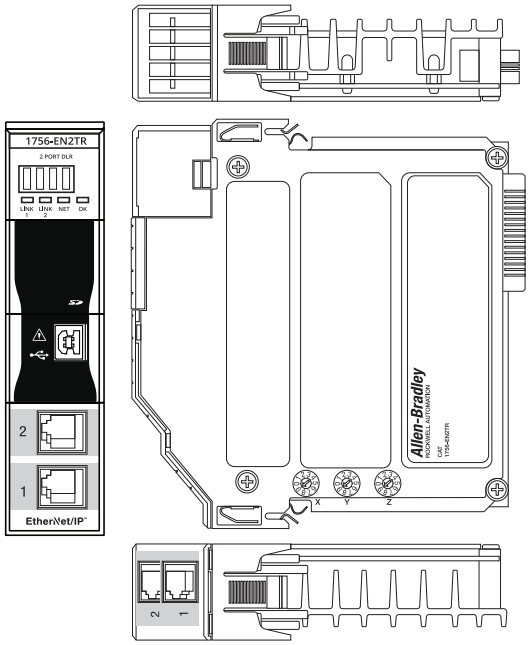


Figure 4 - 1756-EN2F

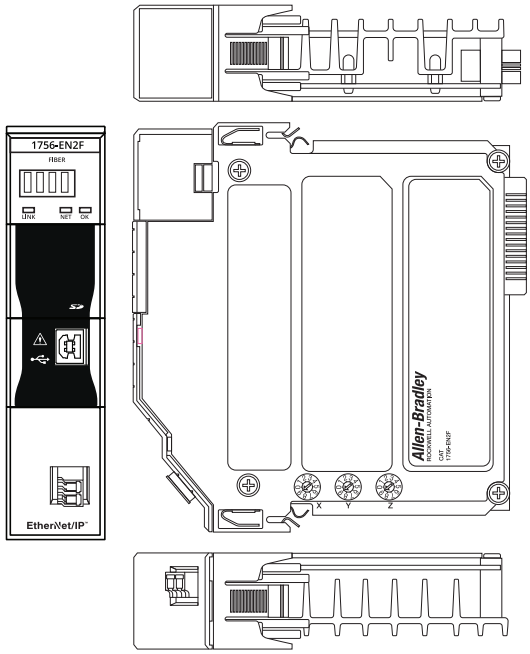
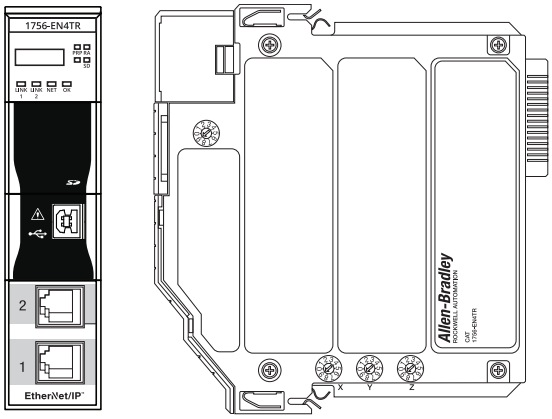


Figure 5 - 1756-EN4TR



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

Stratix Switches

To 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.

For detailed specifications for Stratix switches, see Stratix Ethernet Switch Specifications Technical Data, publication 1783-TD001.

DeviceNet Network

The DeviceNet network is open, providing connections between simple industrial devices, such as sensors and actuators, and higher-level devices, such as controllers and computers. The DeviceNet network uses the Common Industrial Protocol (CIP) to control, configure, and collect data for industrial devices.

Table 10 - 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	400 mA
Current draw @ 24V DC	0 mA
DeviceNet current draw @ 24V DC	60 mA
DeviceNet voltage range	11...25V DC CL 2/SELV
Power dissipation	3.5 W
Thermal dissipation	11.9 BTU/hr
Isolation voltage	50V (continuous), basic insulation type, DeviceNet network to backplane Type tested at 853V AC for 60 s No isolation between USB and backplane Compliant and tested according to IEC/UL 61010-1
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.
DeviceNet port	1 DeviceNet open-style 5- or 10-pin linear plug
DeviceNet connector torque	0.56...0.79 N•m (5...7 lb•in)
USB port(1)	USB full speed (12 Mbps)
Wiring category(2)	1 - On DeviceNet ports 3 - On USB ports
Temperature code	T4
Enclosure type rating	None (open-style)

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(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. Refer to the DeviceNet Media Design and Planning Guide, publication DNET-UM072, for information specific to your DeviceNet network.

Table 11 - Environmental Specifications - 1756-DNB DeviceNet Module

Attribute	1756-DNB
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 Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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
Emissions CISPR 11 (IEC 61000-6-4):	Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±3 kV at 5 kHz on DeviceNet ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on DeviceNet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

Table 12 - 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.
CE	European Union 2014/30/EU EMC Directive, compliant with the following: • 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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	European Union 2014/34/EU ATEX Directive, compliant with the following: • EN 60079-15; Potentially Explosive Atmospheres, Protection “e” • EN 60079-0; General Requirements II 3 G Ex ec IIC T4 Gc
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
IECEx	IECEx System, compliant with the Standards IEC 60079-0, General Requirements, and IEC 60079-7, Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc IECEx UL 22.0063X
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
DeviceNet	ODVA conformance tested to DeviceNet specifications
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products

(1) When product is marked. See the Product Certification link at rok.auto/certifications 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 four-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 patchcords in varying lengths. Many rugged, durable DeviceNet components are available for use in round trunk systems. Stainless-steel versions of round cable system components are also available: • 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, see the DeviceNet Media User Manual, publication DNET-UM072.

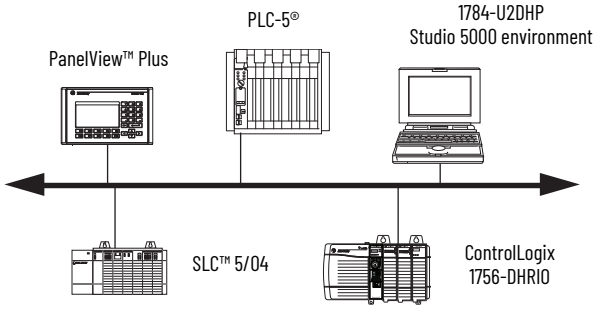
DH+ and Remote I/O Networks

The Data Highway Plus network supports messaging between devices. The remote IO-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

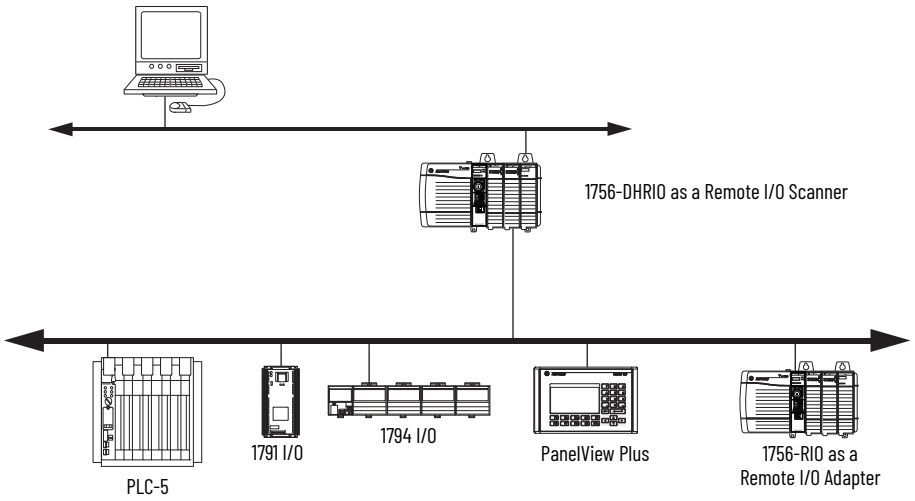


Table 13 - Technical Specifications - 1756 DH+ and Remote I/O Modules

Attribute	1756-DHRIO	1756-RIO
Communication rate	57.6 Kbps, 115.2 Kbps, 230.4 Kbps	
Remote I/O communication	Remote I/O scanner only 32 logical rack connections per remote I/O channel 16 block transfer connections per remote I/O channel	Remote I/O scanner or adapter(1) 32 physical racks (0…76), any combination of rack size and block transfers
Connections supported, max	32	10 scheduled I/O
Current draw @ 5.1V DC	850 mA	450 mA
Current draw @ 24V DC	1.7 mA	5 mA
Power dissipation	4.5 W	2.5 W
Thermal dissipation	15.4 BTU/hr	8.5 BTU/hr
Isolation voltage	30V (continuous), basic insulation type, DHRIO A/B to backplane, and DHRIO A/programming port to DHRIO B No isolation between DHRIO A and Programming port Type tested at 877V DC for 60 s Compliant and tested according to IEC/UL 61010-1	50V (continuous), basic insulation type, RIO communication lines to backplane Type tested at 500V AC for 60 s Compliant and tested according to IEC/UL 61010-1
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	2, individually selectable for DH+ or remote I/O	1 for remote I/O
Screw terminal torque	—	0.5…0.6 N•m (5…7 lb•in)
Wire size	0.519 mm^2 (20 AWG) Belden 9463 copper twinaxial	
Wiring category(2)	2 - on DHRIO ports 3 - on local programming port	2 - on RIO ports
North American temperature code	T4A	
IEC temperature code	T4	—
Enclosure type rating	None (open-style)	

(1) When the 1756-RIO module is used as a remote I/O adapter, the chassis must include a ControlLogix controller.
(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.

Table 14 - Environmental Specifications - 1756 DH+ and Remote I/O Modules

Attribute	1756-DHRIO	1756-RIO
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 Damp Heat)	5...95% noncondensing	
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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	
Emissions CISPR 11 (IEC 61000-6-4)	Class A	
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz	
EFT/B immunity IEC 61000-4-4	± 2 kV at 5 kHz	±2 kV at 5 kHz
Surge transient immunity IEC 61000-4-5	± 2 kV line-earth (CM)	
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz	

Table 15 - Certifications - 1756 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.	—
CE	European Union 2014/30/EU EMC Directive, compliant with the following: • 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)	
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions	
ATEX	European Union 2014/34/EU ATEX Directive, compliant with the following: • EN 60079-15; Potentially Explosive Atmospheres, Protection “e” • EN 60079-0; General Requirements II 3 G Ex ec IIC T4 Gc	—
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107	
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment	
IECEx	IECEx System, compliant with the Standards IEC 60079-0, General Requirements, and IEC 60079-7, Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc IECEx UL 22.0063X	
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3	
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements	
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products	

(1) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Table 16 - Technical Specifications - 1756 DH+ and Remote I/O XT Module

Attribute	1756-DHRIOXT
Communication rate	57.6 Kbps, 115.2 Kbps, 230.4 Kbps
DH+ communication connections	32 DH+ messages per DH+ module
Remote I/O communication connections	Remote I/O scanner only 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, DHRIO A/B to backplane, and DHRIO A/programming port to DHRIO B No Isolation between DHRIO A and Programming port Type tested at 853V AC for 60 s Compliant and tested according to IEC/UL 61010-1
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A4LXT, 1756-A5XT, 1756-A7XT, 1756-A7LXT
Power supply, standard	1756-PBXT
Power supply, redundant	None
Ports	2, individually selectable for DH+ or remote I/O
Screw terminal torque	0.5…0.6 N•m (5…7 lb•in)
Wire size	0.519 mm^2 (20 AWG) Belden 9463 copper twinaxial
Wiring category(1)	2 - on DHRIO ports 3 - on local programming port
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.

Table 17 - Environmental Specifications - 1756 DH+ and Remote I/O XT Module

Attribute	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 Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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
Emissions CISPR 11 (IEC 61000-6-4)	Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±2 kV at 5 kHz on DHRIO ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on DHRIO ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

Table 18 - Certifications - 1756 DH+ and Remote I/O XT 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.
CE	European Union 2014/30/EU EMC Directive, compliant with the following: • 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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	European Union 2014/34/EU ATEX Directive, compliant with the following: • EN 60079-15; Potentially Explosive Atmospheres, Protection “e” • EN 60079-0; General Requirements II 3 G Ex ec IIC T4 Gc
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
IECEx	IECEx System, compliant with the Standards IEC 60079-0, General Requirements, and IEC 60079-7, Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc IECEx UL 22.0063X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products

(1) When product is marked. See the Product Certification link at rok.auto/certifications 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, including the following: • Preconfigured 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 does the following:

- 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

Table 19 - 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 μs
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	6.2 W
Thermal dissipation	21.2 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 (3.28...984.2 ft)
Temperature code	T4
Enclosure type rating	None (open-style)

Table 20 - Environmental Specifications - 1756-SYNCH Module

Attribute	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 Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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
Emissions CISPR 11 (IEC 61000-6-4)	Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 1V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz

Table 21 - Certifications - 1756-SYNCH Module

Certification[1]	1756-SYNCH
UL	UL Listed Industrial Control Equipment. See UL file E65584
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 2014/30/EU EMC Directive, compliant with the following: • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products

(1) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Accessories—SynchLink Network

Cat. No.	Description
1403-CF*xxx*	Rockwell Automation fiber-optic cable assembly
HCP-M0200T V01RK	Lucent Technologies 200 µm simplex cable

ControlNet Network

The ControlNet network is considered a legacy network. For replacement information, see the ControlNet to EtherNet/IP Migration Reference Manual, publication CNET-RM001.

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 requires	Select one of these interfaces
128 ControlNet connections per communication module	1756-CN2 1756-CN2R 1756-CN2RK 1756-CN2RXT
Control in environments where temperatures range from -25...+70 °C (-13...+158 °F)	1756-CN2RXT
40...48 ControlNet connections per communication module	1756-CNB 1756-CNBR

Connect to Other Devices via a ControlNet Network

The Studio 5000 environment 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 configure 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.

Table 22 - Technical Specifications - 1756 ControlNet Modules

Attribute	1756-CN2	1756-CN2R, 1756-CN2RK	1756-CNB	1756-CNBR
Configuration	Standard	Redundant	Standard	Redundant
ControlNet communication rate	5 Mbps			
Logix communication connections	128		40...48	
Connections supported, max	131(1)		64	
Number of nodes, max	99			
Current draw @ 5.1V DC	1100 mA	1300 mA	970 mA	
Current draw @ 24V DC	3 mA		1.7 mA	
Power dissipation	5.6 W	6.7 W	5.1 W	
Thermal dissipation	19.1 BTU/Hr	22.9 BTU/hr	17.4 BTU/hr	
Isolation voltage	• Standard: 30V (continuous), basic insulation type, ControlNet network to backplane • Redundant: 30V (continuous), basic insulation type, ControlNet A/B to backplane, and ControlNet A to ControlNet B • USB to backplane and USB to ControlNet • No isolation between NAP or USB and backplane • Type tested at 500V AC for 60 s • Compliant and tested according to IEC/UL 61010-1			
Weight, approx.	0.26 kg (0.57 lb)	0.293 kg (0.64 lb)	0.26 kg (0.57 lb)	0.293 kg (0.64 lb)
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			
ControlNet port	1 ControlNet BNC	2 ControlNet BNC	1 ControlNet BNC	2 ControlNet BNC
ControlNet cable	1786-RG6 quad shield RG6 coaxial cable			
USB port(2)	USB full speed (12 Mbps)		—	—
NAP port	—	—	1 NAP RJ45	1 NAP RJ45
NAP cable	—	—	1786-CP	
Wiring category(3)	1 - on ControlNet ports 3 - on USB ports		1 - on ControlNet ports 3 - on NAP ports	
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) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(3) 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.

Table 23 - Environmental Specifications - 1756 ControlNet Modules

Attribute	1756-CN2, 1756-CN2R, 1756-CN2RK	1756-CNB, 1756-CNBR
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 Damp Heat)	5…95% noncondensing	
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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)	30 g	50 g
Emissions CISPR 11 (IEC 61000-6-4)	Class A	
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80…2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000…2700 MHz	
EFT/B immunity IEC 61000-4-4	±3 kV at 5 kHz on ControlNet ports	
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on ControlNet ports	
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz…80 MHz	

Table 24 - Certifications - 1756 ControlNet Modules

Certification[1]	1756-CN2R/B, 1756-CNB, 1756-CNBR	1756-CN2R/C, 1756-CN2, 1756-CN2RK
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 2014/30/EU EMC Directive, compliant with the following: • 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)	
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions	
ATEX	European Union 2014/34/EU ATEX Directive, compliant with the following: • EN 60079-15; Potentially Explosive Atmospheres, Protection “e” • EN 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc	
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107	
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment	
IECEx	IECEx System, compliant with the Standards IEC 60079-0, General Requirements, and IEC 60079-7, Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc IECEx UL 22.0063X	
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3	
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations	
CI	ControlNet International conformance tested to ControlNet specifications	
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements	
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products	

(1) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Table 25 - Technical Specifications - 1756 ControlNet-XT Module

Attribute	1756-CN2RXT
Configuration	Redundant
ControlNet communication rate	5 Mbps
Logix communication connections	128
Connections supported, max	131(1)
Number of nodes, max	99
Current draw @ 5.1V DC	1300 mA
Current draw @ 24V DC	3 mA
Voltage and current ratings	5.1V DC, 1.3 A
Power dissipation	6.6 W, 22.5 BTU/Hr
Thermal dissipation	22.9 BTU/hr
Isolation voltage	30V (continuous), Basic Insulation Type, ControlNet A/B to Backplane, ControlNet A to ControlNet B, USB to ControlNet A/B, and USB to Backplane Type tested at 500V AC for 60 s Compliant and tested according to IEC/UL 61010-1
Weight, approx.	0.293 kg (0.64 lb)
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A4LXT, 1756-A5XT, 1756-A7XT, 1756-A7LXT
Power supply, standard	1756-PAXT, 1756-PBXT
Power supply, redundant	None
ControlNet port	2 ControlNet BNC
ControlNet cable	1786-RG6 quad-shield RG6 coaxial cable
USB port(2)	USB full speed (12 Mbps)
Wiring category(3)	1 - on ControlNet ports 3 - on USB port
Temperature code	T4
Enclosure type rating	None (open-style)

(1) There are 128 connections are available for standard use. An additional 3 connections are reserved for redundant control.
(2) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(3) 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.

Table 26 - Environmental Specifications - 1756 ControlNet-XT Module

Attribute	1756-CN2RXT
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 Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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)	1756-CN2RXT/C, 30 g 1756-CN2RXT/B, 50 g
Emissions CISPR 11 (IEC 61000-6-4)	Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±3 kV at 5 kHz on ControlNet ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on ControlNet port
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

Table 27 - Certifications - 1756 ControlNet-XT 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.
CE	European Union 2014/30/EU EMC Directive, compliant with the following: • 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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	European Union 2014/34/EU ATEX Directive, compliant with the following: • EN 60079-15; Potentially Explosive Atmospheres, Protection “e” • EN 60079-0; General Requirements II 3 G Ex ec IIC T4 Gc
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
IECEx	IECEx System, compliant with the Standards IEC 60079-0, General Requirements, and IEC 60079-7, Explosive Atmospheres, Protection “e”; II 3 G Ex EC IIC T4 Gc IECEx UL 22.0063X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
CI	ControlNet International conformance tested to ControlNet specifications
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products

(1) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

ControlNet Module Diagrams

Figure 6 - 1756-CN2

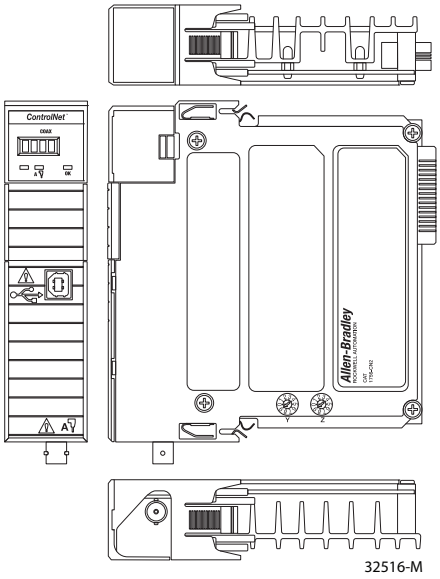
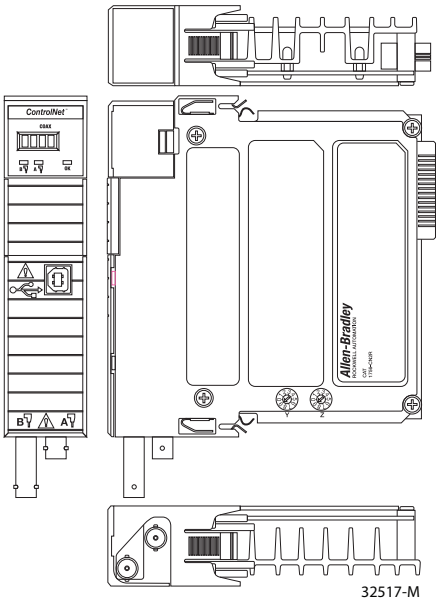


Figure 7 - 1756-CN2R



Accessories—ControlNet Network

Cat. No.	Description
Taps	
1786-TCT2BD1	T-tap straight IP67 rated
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-TNCLXT4	ControlNet IP67 termination resistor
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 distance
1786-RPFRXL	ControlNet fiber ring repeater, extra long distance
1786-RPFS	ControlNet fiber repeater, short distance
1786-RPFM	ControlNet fiber repeater, medium distance

For more information, see ControlNet Media System Components List, publication AG-PA002.

Legacy Modules

Refer the following sections to replace these legacy modules in your systems:

- 1756-EWEB module
- 1756-TIME module
- 1756-ENBT module

1756-EWEB Module

The 1756-EWEB module provides access to information from the control system using a web browser.

The 1756-EWEB module is End of Life as of November 1, 2021. As an engineered replacement, use a ControlLogix 1756 Compute module (1756-CMS1B1, 1756-CMS1C1). For more information, see the EtherNet/IP Web Server Module Migration Reference Manual, publication 1756-RM013.

Table 28 - 1756-EWEB Connections Specifications

Connections		CIP Unconnected Messages (backplane + Ethernet)
TCP	CIP	
64	128	128 + 128

Table 29 - 1756-EWEB Data Specifications

Socket Services	SNMP Support (password required)	Duplicate IP Detection (starting revision)
Yes	Yes	Revision 2.2

Table 30 - 1756-EWEB Technical Specifications

Attribute	1756-EWEB
EtherNet/IP communication rate	10/100 Mbps
Current draw @ 5.1V DC	700 mA
Current draw @ 24V DC	3 mA
Power dissipation	3.7 W
Thermal dissipation	12.6 BTU/hr
Isolation voltage	30V (continuous), basic insulation type, Ethernet network to backplane Type tested @ 707V DC for 60 s Compliant and tested according to IEC/UL 61010-1
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, 1756-PA75, 1756-PB72, 1756-PB75, 1756-PC75, 1756-PH75
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2
Ethernet port	1 Ethernet RJ45 Category 5
Ethernet cable	Multimode fiber, LC connector 802.3 compliant shielded or unshielded twisted pair
Wiring category(1)	2 - on Ethernet ports
Temperature code	T4
Enclosure type rating	None (open-style)
Transmitter launch power at Beginning of Life (BOL), min Allow -1 dB at End of Life (EOL)	-19 dBm into 62.5/125 µm fiber, — = 0.275 -22.5 dBm into 50/125 µm fiber, — = 0.20

(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.

Table 31 - 1756-EWEB Environmental Specifications

Attribute	1756-EWEB
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 °C < Ta < 60 °C (32 °F < Ta < 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 °C< Ta < 85 °C (-40 °F < Ta < 185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged damp heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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
Emission CISPR 11 (IEC 61000-6-4)	Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 1V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz

Table 32 - 1756-EWEB Certifications

Certification[1]	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.
CE	European Union 2004/108/IEC EMC Directive, compliant with: • 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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with the following: • EN 60079-15; Potentially Explosive Atmospheres, Protection “n” • EN 60079-0; General Requirements • II 3 G Ex nA IIC T4 Gc X
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
IECEx	—
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications

(1) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

1756-TIME Module

The 1756-TIME module provides accurate time synchronization on different interfaces by using Global Positioning System (GPS) technology. The 1756-TIME module can obtain time from various sources, and provide time synchronization on other devices by acting as a gateway between different time synchronization methods and standards.

The 1756-TIME module is End of Life as of November 1, 2021. As a replacement, use the Time Sync A-TSM/B module available from Aparian. For more information, see https://www.aparian.com/products/timesync.

Table 33 - Technical Specifications - 1756-TIME Module

Attribute	1756-TIME
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...+50 °C (+32...+122 °F) in a Series B Chassis 0...+60 °C (+32...+140 °F) in a Series C Chassis
Temperature, nonoperating 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)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Emissions	IEC 61000-6-4
EDS Immunity IEC 61000-4-2	4 kV contact discharges 8 kV air discharges
Radiated RF Immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...6000 MHz
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on signal ports ±2 kV at 5 kHz on communications ports
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth(CM) on signal ports no shielded ports - omit from publication ±2 kV line-earth(CM) on communications ports
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Enclosure type rating	None (open-style)
Voltage and current ratings	Backplane: 1.01A @ 5.1V DC, 2.64 mA @ 1.2 V DC
Isolation voltage	30V (continuous), Basic Insulation Type Type tested at 1000V AC for 60 s Ethernet Ports to Backplane IRIG-B to Backplane Compliant and tested according to IEC/UL 61010-1
Wire size	Ethernet connections RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702 IRIG-B connection Type RG58 or equivalent Antenna connection Cable assembly, TNC Plug to SMA, ships with product
Wiring Category(1)	2 - on signal ports 2 - on communications ports

(1) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Table 34 - Certifications - 1756-TIME Module

Certification[1] (when product is marked)	1756-TIME
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.
CE	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)
CE	European Union 1999/5/EC R&TTE, compliant with: • EN 61010-1; Measurement, Control, and Laboratory Equipment Safety Requirements • EN 61010-2-201; Control Equipment Safety Requirements • EN 300 440-1 V1.6.1; CSE European Union 2011/65/EU RoHS, compliant with: • EN 50581; Technical documentation
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

1756-ENBT Module

The 1756-ENBT bridge module establishes communication between Logix 5000™ controllers and communicates with various devices on the Ethernet network.

The 1756-ENBT module is End of Life as of November 1, 2021. As an engineered replacement, use a ControlLogix 1756 EtherNet Communication module (1756-EN2T).

Table 35 - 1756-ENBT Connections Specifications

Connections		CIP Unconnected Messages (backplane + Ethernet)
TCP	CIP(1)	
64	128	64 + 64

(1) CIP connections can be used for all explicit or all implicit applications. For example, a 1756-ENBT module has a total of 128 CIP connections that can be used for any combination of connections.

Table 36 - 1756-ENBT Data Specifications

Socket Services	SNMP Support (password required)	Duplicate IP Detection (starting revision)
No	Yes	Revision 3.3

Table 37 - 1756-ENBT Technical Specifications

Attribute	1756-ENBT
EtherNet/IP communication rate	10/100 Mbps
Current draw @ 5.1V DC	700 mA
Current draw @ 24V DC	3 mA
Power dissipation	3.7 W
Thermal dissipation	12.6 BTU/hr
Isolation voltage	30V (continuous), basic insulation type, Ethernet network to backplane Type tested @ 707V DC for 60 s Compliant and tested according to IEC/UL 61010-1
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, 1756-PA75, 1756-PB72, 1756-PB75, 1756-PC75, 1756-PH75
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2
Ethernet port	1 Ethernet RJ45 Category 5
Ethernet cable	802.3 compliant shielded or unshielded twisted-pair
Wiring category(1)	2 - on Ethernet ports
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.

Table 38 - 1756-ENBT Environmental Specifications

Attribute	1756-ENBT
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 °C < Ta < 60 °C (32 °F < Ta < 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 °C< Ta < 85 °C (-40 °F < Ta < 185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 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
Emission CISPR 11 (IEC 61000-6-4)	Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 1V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

Table 39 - 1756-ENBT Certifications

Certification[1]	1756-ENBT
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: • 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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with the following: • EN 60079-15; Potentially Explosive Atmospheres, Protection “n” • EN 60079-0; General Requirements • II 3 G Ex nA IIC T4 Gc X
UKEX	In conformity with the following UKEX Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2604X • Zone 2 classification according to UKEX Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
IECEx	IECEx System, compliant with: • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection “n” • IEC 60079-0; General Requirements • II 3 G Ex nA IIC T4 Gc • IECEx UL 14.0008X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications

(1) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Notes:

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Resource	Description
1756 EtherNet/IP Communication Modules Installation Instructions, publication 1756-IN050	Provides information on installing EtherNet/IP™ modules.
ControlLogix EtherNet/IP Network Devices User Manual, publication 1756-UM004	Describes how you can use ControlLogix® EtherNet/IP communication modules with a Logix 5000® controller and communicate with various devices on the Ethernet/IP network.
ControlNet Modules Installation Instructions, publication CNET-IN005	Provides instructions for installing ControlNet® modules.
ControlLogix System User Manual, publication 1756-UM001	Provides information on system architecture, configuring secure communication, and diagnostics.
ControlLogix Time Synchronization Module - Series B User Manual, publication 1756-UM542	Describes the functionality, installation, configuration, and operation of the 1756-TIME module.
DeviceNet Network Configuration User Manual, publication DNET-UM004	Provides information on system architecture, configuring communication, and diagnostics.
EtherNet/IP Network Devices User Manual, publication ENET-UM006	Describes how to use EtherNet/IP communication modules in Logix 5000 control systems
ControlLogix DH-485 Communication Module User Manual, publication 1756-UM532	Provides information on system architecture, configuring communication, and diagnostics.
ControlLogix Data Highway Plus-Remote I/O Communication Interface Module User Manual, publication 1756-UM514	Provides information about programming, messaging, applying, and connecting the module.
ControlLogix SynchLink Module User Manual, publication 1756-UM521	Provides information about topologies, configurations, planning, and installing a Synchlink™ module.
EtherNet/IP Network Devices User Manual, ENET-UM006	Describes how to configure and use EtherNet/IP devices to communicate on the EtherNet/IP network.
Ethernet Reference Manual, ENET-RM002	Describes basic Ethernet concepts, infrastructure components, and infrastructure features.
System Security Design Guidelines Reference Manual, SECURE-RM001	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
UL Standards Listing for Industrial Control Products, publication CMPNTS-SR002	Assists original equipment manufacturers (OEMs) with construction of panels, to help ensure that they conform to the requirements of Underwriters Laboratories.
American Standards, Configurations, and Ratings: Introduction to Motor Circuit Design, publication IC-AT001	Provides an overview of American motor circuit design based on methods that are outlined in the NEC.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002	Provides a quick reference tool for Allen-Bradley industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications.	Provides declarations of conformity, certificates, and other certification details.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, Knowledgebase, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

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