

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

Topic	Page
Summary of Changes	2
Available Communication Modules	3
Communication Connections	3
EtherNet/IP Network	4
EtherNet/IP Network Specifications	4
EtherNet/IP Module Diagrams	12
Accessories—Ethernet Network	14
Stratix Switches	14
DeviceNet Network	15
Accessories—DeviceNet Network	17
DH+ and Remote I/O Networks	18
Example Configuration—DH+ Network	18
Example Configuration—Remote I/O Network	18
Accessories—DH+ and Remote I/O Networks	24
SynchLink Communication	25
Accessories—SynchLink Network	26
ControlNet Network	27
Connect to Other Devices via a ControlNet Network	28
ControlNet Module Diagrams	34
Accessories—ControlNet Network	35
Legacy Modules	36
1756-EWEB Module	36
1756-TIME Module	39
1756-ENBT Module	41
Additional Resources	45

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

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.