Technical Data

Original Instructions

Allen-Bradley by ROCKWELL AUTOMATION

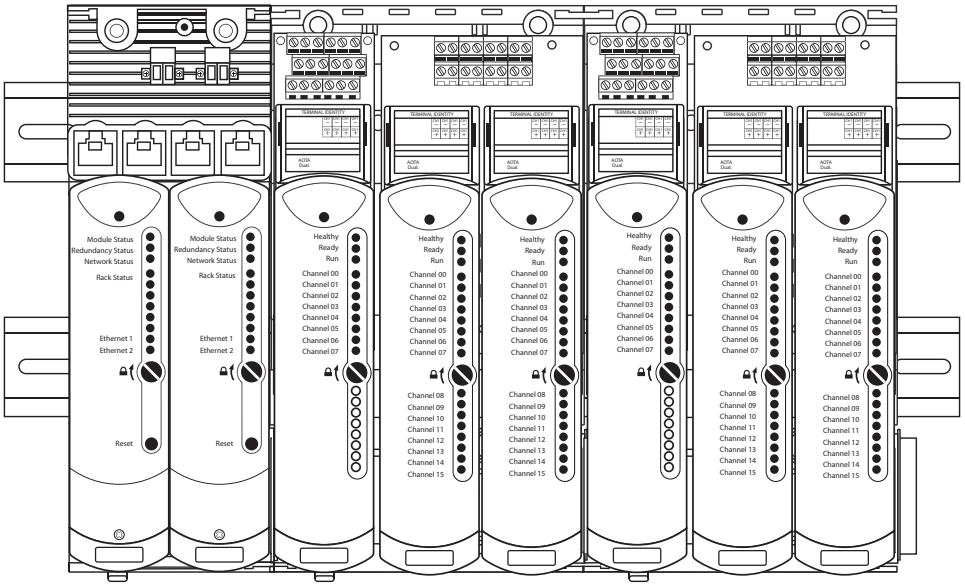
1715 Redundant I/O System Specifications

System Module, Catalog Numbers 1715-AENTR, 1715-IB16D, 1715-OB8DE,1715-IF16, 1715-OF8I

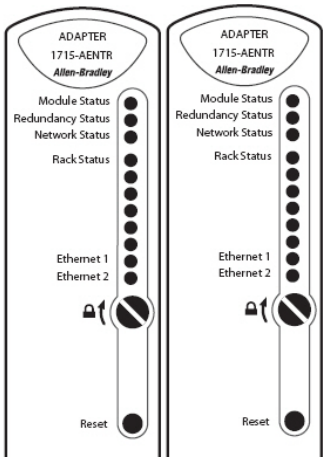
Base Unit, Catalog Numbers 1715-A2A, 1715-A3I0

Termination Assembly, Catalog Numbers 1715-TASIB16D, 1715-TADIB16D, 1715-TASOB8DE, 1715-TADOB8DE, 1715-TASIF16, 1715-TADIF16, 1715-TASOF8, 1715-TADOF8

Accessory, Catalog Numbers 1715-N2S, 1715-N2T, 1715-C2



1715-AENTR EtherNet/IP Adapter and 1715-A2A Module Base



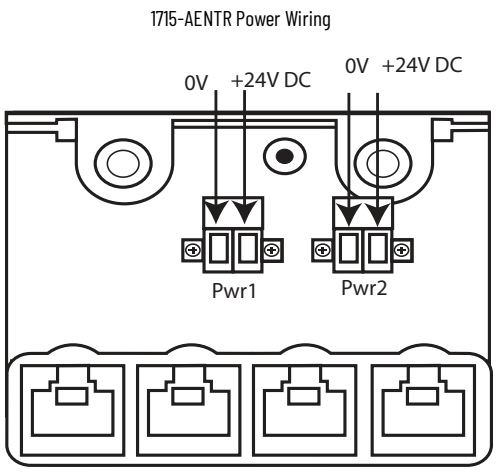


Table 3 - Technical Specifications - 1715-AENTR EtherNet/IP Adapter and 1715-A2A Module Base

Attribute	1715-AENTR and 1715-A2A
Modules supported, max	24 per adapter pair
Operating voltage range, supply power and/or current ratings	1715-AENTR backplane: 380 mA @18...32V DC 1715-A2A input power: 10.4 A total max/400 mA max per slot @ 18...32V DC For fault-tolerant applications, the I/O module power is less than 3.2 A
Power dissipation	8 W max, per adapter
Isolation voltage	50V (continuous), basic insulation type, Ethernet ports to backplane and Ethernet ports to DC power ports No isolation between individual Ethernet ports No isolation between DC power ports Type tested @ 500V AC for 60 s
Base unit	1715-A2A (2-slot adapter base unit)
Weight, approx	1715-AENTR module: 420 g (14.82 oz) 1715-A2A base unit: 283 g (9.98 oz)
Fuse, type	4 A, 125V, Type T
Wiring category	2 - on power ports 2 - on communication ports(1)
Wire size	1715-A2A DC Power connections: single 2.5 mm^2 (12 AWG) solid or stranded copper wire rated at 85 °C (185 °F) or greater, 7 mm (9/32 in.) strip length 1715-A2A Ground connection: 4 mm^2 (10 AWG) min
Wire type	1715-A2A Ethernet connections: Shielded RJ45 connector according to IEC60603-7, 2-pair or 4-pair shielded Category 5e min cable according to TIA 568-B 1 or shielded Category 5 cable according to ISO/IEC 24702
North American temperature code	T4
IEC temperature code	T4
Enclosure type rating	None (open-style)

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

Table 4 - Environmental Specifications - 1715-AENTR EtherNet/IP Adapter and 1715-A2A Module Base

Attribute	1715-AENTR and 1715-A2A
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...60 °C (-13...140 °F)
Temperature, surrounding air max	60 °C (140 °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 Nonoperating Damp Heat)	10...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)	Din rail mount: 25 g Panel mount: 30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	Installed: 30 g Uninstalled: 50 g (with slot fillers)
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	20V/m with 1 kHz sine-wave 80% AM from 80...1000 MHz 10V/m with 1 kHz sine-wave 80% AM from 1000...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 power ports ±2 kV at 5 kHz on shielded Ethernet ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on shielded Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz

Table 5 - Certifications - 1715-AENTR EtherNet/IP Adapter and 1715-A2A Module Base

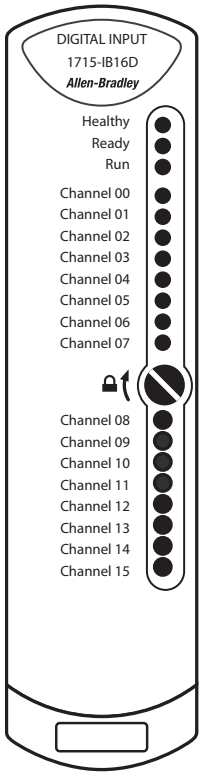
Certification[1]	1715-AENTR and 1715-A2A
cULus	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E341697. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E251761.
CE	European Union 2014/30/EC EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union Directive 2014/34/EU and UK Statutory Instrument (UKSI) 2016:1107 as amended by UKSI 2019:696, compliant with: • EN 60079-0, Explosive atmospheres – Part 0: Equipment – General requirements • EN 60079-7, Explosive atmospheres – Part 7: Equipment protection by increased safety "e" • ATEX/UKCA certification: Ex ec IIC T4 Gc • ATEX certificate number: 11 ATEX 7928686X • UKCA certificate number: UL22UKEX2512X

Table 5 - Certifications - 1715-AENTR EtherNet/IP Adapter and 1715-A2A Module Base (Continued)

Certification[1]	1715-AENTR and 1715-A2A
IECEx	IECEx Hazardous Location approval, compliant with: • IEC 60079-0, Explosive atmospheres – Part 0: Equipment – General requirements • IEC 60079-7, Explosive atmospheres – Part 7: Equipment protection by increased safety "e" • IECEx certification: Ex II 3G Ex ec IIC T4 Gc • IECEx certificate number: IECEx UL 15.0032X
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
Functional Safety	TÜV Certified for Functional Safety[2]: Capable of SIL 2 according to EN 62061, IEC 61508, and EN 61326-3-1

(1) When marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) When used with specified firmware revisions.

1715-IB16D Digital Input Module, 1715-A310 Module Base, and Termination Assemblies



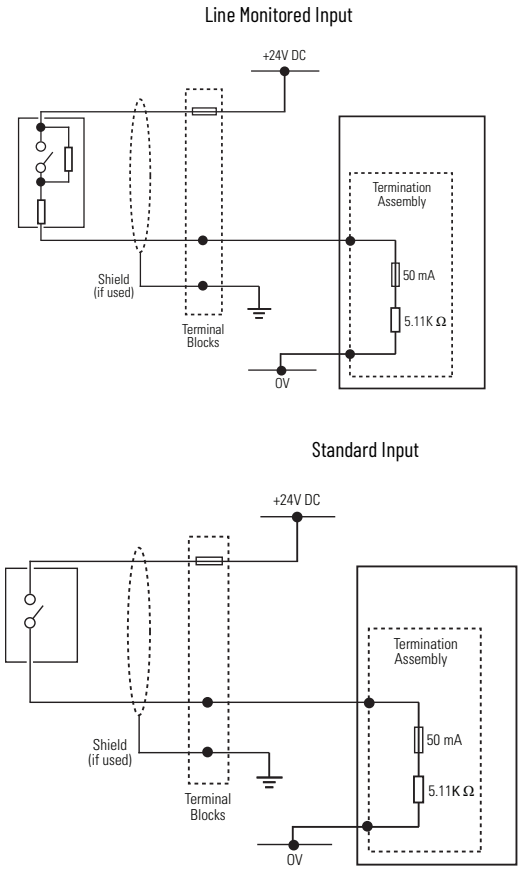


Table 6 - Technical Specifications - 1715-IB16D Digital Input Module, 1715-A3I0 Module Base, and 1715-TASIB16D, 1715-TADIB16D Termination Assemblies

Attribute	1715-IB16D, 1715-A3I0, 1715-TASIB16D, 1715-TADIB16D
Operating voltage range, supply power and/or current ratings	1715-IB16D backplane: 260 mA @ 18...32V DC 1715-TASIB16D, 1715-TAD8B16D: 6.5 mA per channel @ 0...32V DC
Slew rate, max	3600 V/s(1)
Translation rate, max	1/(Application scan time + 10 ms) Hz(1)
Power dissipation	System 4.0 W max. Field loop: 0.2 W per field loop max.
Isolation voltage	50V (continuous), basic insulation type, I/O ports to backplane No isolation between individual I/O ports if the 1715-TASIB16D termination assembly is fitted 50V isolation between individual ports if 1715-TADIB16D termination assembly is fitted Type tested at 500V AC for 60 s
Weight, approx	1715-IB16D: 360 g (12.70 oz) I/O base unit: 133 g (5 oz) Termination assembly: 133 g (5 oz), 260 g (10 oz)
Dimensions (H x W x D), approx	166 x 42 x 118 mm (6.5 x 1.625 x 4.625 in.)
Wire size	1715-TASIB16D, 1715-TADIB16D connections: 0.33...1.5 mm^2 (22...16 AWG) solid or stranded copper wire rated at 85 °C (185 °F), or greater
Wiring category	2 - on signal ports(2)
Fuse, type	50 mA, 125V, Type T
North American temperature code	T4
IEC temperature code	T4
Enclosure type	None (open-style)

(1) The input slew can exceed the specified levels if the duration of the transgression is less than the process safety time of the configured module.Transgression of the slew rate limits identified previously can lead to channel failure that results from diagnostics that are otherwise designed to ensure channels are operating within their defined safety accuracy.
(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 7 - Environmental Specifications - 1715-IB16D Digital Input, 1715-A3I0 Module Base, and 1715-TASIB16D, 1715-TADIB16D Termination Assemblies

Attribute	1715-IB16D, 1715-A3I0, 1715-TASIB16D, 1715-TADIB16D
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...60 °C (-13...140 °F)
Temperature, surrounding air, max	70 °C (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 Nonoperating Damp Heat)	10...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)	DIN rail mount: 25 g Panel mount: 30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	Installed: 30 g Uninstalled: 50 g (with slot fillers)
Emissions CISPR 11 (IEC 61000-6-4)	Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges

Table 7 - Environmental Specifications - 1715-IB16D Digital Input, 1715-A3I0 Module Base, and 1715-TASIB16D, 1715-TADIB16D Termination Assemblies

Attribute	1715-IB16D, 1715-A3I0, 1715-TASIB16D, 1715-TADIB16D
Radiated RF immunity IEC 61000-4-3	20V/m with 1 kHz sine-wave 80% AM from 80...1000 MHz 10V/m with 1 kHz sine-wave 80% AM from 1000...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 @ 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz

Certifications - 1715-IB16D Digital Input, 1715-A3I0 Module Base, and 1715-TASIB16D, 1715-TADIB16D Termination Assemblies

Certification[1]	1715-IB16D, 1715-A3I0, 1715-TASIB16D, 1715-TADIB16D
cULus	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E341697. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E251761.
CE	European Union 2014/30/EC EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union Directive 2014/34/EU and UK Statutory Instrument (UKSI) 2016:1107 as amended by UKSI 2019:696, compliant with: • EN 60079-0, Explosive atmospheres – Part 0: Equipment – General requirements • EN 60079-7, Explosive atmospheres – Part 7: Equipment protection by increased safety "e" • ATEX/UKCA certification: Ex ec IIC T4 Gc • ATEX certificate number: 11 ATEX 7928686X • UKCA certificate number: UL22UKEX2512X
IECEx	IECEx Hazardous Location approval, compliant with: • IEC 60079-0, Explosive atmospheres – Part 0: Equipment – General requirements • IEC 60079-7, Explosive atmospheres – Part 7: Equipment protection by increased safety "e" • IECEx certification: Ex II 3G Ex ec IIC T4 Gc • IECEx certificate number: IECEx UL 15.0032X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
Functional Safety	TÜV Certified for Functional Safety[2]: Capable of SIL 2 according to EN 62061, IEC 61508, and EN 61326-3-1

(1) When marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) When used with specified firmware revisions.