Technical Data

Allen-Bradley

1794 FLEX I/O Communication Adapters Specifications

Standard FLEX I/O Catalog Numbers 1794-AENT, 1794-AENTR, 1794-ACN, 1794-ACNR, 1794-ACN15, 1794-ACN15K, 1794-ACNR15, 1794-ADN, 1794-ADNK, 1794-ASB, 1794-ASBK, 1794-ASBLT, 1794-ASB2, 1794-APB, 1794-APBDPV1

FLEX I/O XT Catalog Numbers 1794-AENTRXT, 1794-ACNR15XT

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A FLEX I/O™ adapter module interfaces FLEX I/O modules to an I/O scanner port across a communication network. The FLEX I/O adapter module contains a built-in power supply that converts 24V DC to 5V DC necessary to transfer and receive all the I/O data and configuration for the entire rack.

Your 1794 FLEX I/O system can communicate on:

- EtherNet/IP, single media or redundant
- ControlNet, single media or redundant
- DeviceNet
- Many other open networks including, Remote I/O, PROFIBUS DP, and others from Encompass partners

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.rockwellautomation.com/products/certification/	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley® distributor or Rockwell Automation sales representative.

Available 1794 Adapter Modules

You can select these types of adapter modules.

FLEX I/O Adapter Module Types

Network	Application Requirement
EtherNet/IP	• Plant management (material handling) • Configuration, data collection, and control on a single, high-speed network • Time-critical applications with no established schedule • Data sent regularly • Internet/Intranet connection • Built-in switch, or high availability requirement (2-port AENTR)
ControlNet	• High-speed transfer of time-critical data between controllers and I/O devices • Deterministic and repeatable data delivery • Media redundancy
DeviceNet	• Connections of low-level devices to plant floor controllers • More diagnostics for improved data collection and fault detection • Less wiring and reduced start-up time than a traditional, hard-wired system
Remote I/O	• Connections to Remote I/O networks
PROFIBUS	• Connection to PROFIBUS DP and DPV1 networks

FLEX I/O Adapters

Adapter Type	Catalog Number	Page
EtherNet/IP	1794-AENT 1794-AENTR 1794-AENTRXT	3
ControlNet	1794-ACN 1794-ACNR 1794-ACN15 1794-ACN15K 1794-ACNR15 1794-ACNR15XT	5
DeviceNet	1794-ADN 1794-ADNK	9
Remote I/O	1794-ASB 1794-ASBK 1794-ASBLT 1794-ASB2	11
PROFIBUS	1794-APB 1794-APBDPV1	14

1794-AENT, 1794-AENTR, 1794-AENTRXT

FLEX I/O EtherNer/IP adapter module, FLEX I/O dual port EtherNet/IP adapter module, and FLEX I/O dual port (extreme temperatures) EtherNet/IP adapter module

Technical Specifications - 1794-AENT, 1794-AENTR, 1794-AENTRXT

Attribute	1794-AENT/B	1794-AENTR	1794-AENTRXT
I/O module capacity	8		
Communication rate	10/100 Mbps		
Indicators	Module status – red/green Network status – red/green Link status – green	Module status – red/green Network status – red/green Link 1 status – yellow/green Link 2 status – yellow/green	
Power supply	To comply with the CE Low Voltage Directive (LVD), this equipment must be powered from a source compliant with the following: Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV).		
Input voltage range	19.2…31.2V DC (includes 5% AC ripple)		
Input voltage, nom	24V DC		
Inrush current	23 A for 2 ms	18 A for 2 ms	
FlexBus output current, max	640 mA		
Isolation voltage	50V continuous, Basic Insulation Type Tested @ 1000V AC for 60 s, power to FlexBus to EtherNet		
Power consumption, max	550 mA 440 mA @ 24V DC	500 mA 400 mA @ 24V DC	
Power dissipation, max	7.3 W @ 19.2V DC	7.1 W @ 19.2V DC	6.1 W @ 19.2V DC
Thermal dissipation	24.9 BTU/hr @ 24V DC	24.2 BTU/hr @ 24V DC	20.8 BTU/hr @ 24V DC
Wire size, power conductors	0.33…3.31 mm^2 (22…12 AWG) stranded copper wire rated @ 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation, max		
Wire category (1)	1 - on power ports 2 - on communications ports		
Ethernet connector	1 Ethernet RJ45 Category 5	2 Ethernet RJ45 Category 5	
North American temperature code	T4A	T5	T4A
IEC Temp code	T4	T5	T4
Terminal screw torque	0.8 Nm (7 lb-in.)		
Dimensions, approx. (HxWxD)	87 x 94 x 69 mm 3.4 x 3.7 x 2.7 in.	87 x 94 x 92 mm 3.4 x 3.7 x 3.6 in.	
Weight, approx.	180 g (6.34 oz)	227 g (8.01 oz)	
Publication, Installation Instructions	1794-IN082	1794-IN131	

(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.

Environmental Specifications

Attribute	1794-AENT/B	1794-AENTR	1794-AENTRXT
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…55 °C (32…131 °F)		-25…70 °C (-13…158 °F)
Temperature, surrounding air, max	55 °C (131 °F)		70 °C (158 °F)

Environmental Specifications

Attribute	1794-AENT/B	1794-AENTR	1794-AENTRXT
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): 5…95% noncondensing		
Vibration	IEC 60068-2-6 (Test Fc, Operating): 5 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: Group 1, 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: ±4 kV @ 5 kHz on power ports ±2 kV @ 5 kHz on communications ports	±4 kV @ 5 kHz on power ports ±4 kV @ 5 kHz on communicationss 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 communications ports		
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 Hz sine-wave 80% AM from 150 kHz…80 MHz		

Certifications

Certification[1] (When marked on product)	1794-AENT/B	1794-AENTR	1794-AENTRXT
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 Industrial Control Equipment, certified for US and Canada. See UL File E322657. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E334470.	
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)		
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions		
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications		

Certifications

Certification[1] (When marked on product)	1794-AENT/B	1794-AENTR	1794-AENTRXT
Ex	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection "n" EN 60079-0; General Requirements		
	—	EN 60079-11; Explosive Atmospheres, Protection "i"	
	II 3 G Ex nA II T4 Gc	II 3 G Ex ic nA IIC T5 Gc	II 3 G Ex ic nA IIC T4 Gc
TÜV	TÜV Certified for Functional Safety: Capable of SIL 2		
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 http://www.rockwellautomation.com/products/certification/ for Declaration of Conformity, Certificates, and other certification details.

1794-ACN, 1794-ACNR

FLEX I/O ControlNet adapter module, and FLEX I/O redundant ControlNet adapter module

Technical Specifications

Attribute	1794-ACN	1794-ACNR
I/O module capacity	8	
Communication rate	5 Mbps	
Indicators	Comm A – red/green Comm B – red/green I/O status – red/green	
ControlNet protocol	v1.25	
ControlNet port	1 ControlNet BNC	2 ControlNet BNC
Power consumption, max	400 mA, from external 24V supply	
Power supply	**NOTE:** In order to comply with CE Low Voltage Directives, you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.	
Input voltage range	19.2V…31.2V DC (includes 5% AC ripple)	
Input voltage, nom	24V DC	
FlexBus output current, max	640 mA @ 5V DC	
Isolation voltage	100% tested @ 850V DC for 1 s between user power and FlexBus	
Power dissipation, max	4.6 W @ 19.2V DC	
Thermal dissipation	15.7 BTU/hr @ 19.2V DC	
Terminal screw torque	0.8…1.01 Nm (7…9 in-lb.)	
ControlNet cable	Allen-Bradley RG-6/U Quad shield coax part number 1786-RG6 (standard-PVC CM-CL2) or 1786-RG6F/A (high-flex)	
Wire size	3.31 mm^2 (12 AWG) stranded max 1.2 mm (3/64 in.), insulation, max	
Wire category	2[1]	
North American temperature code	T4A	
IEC temperature code	T4	

Technical Specifications

Attribute	1794-ACN	1794-ACNR
Dimensions, approx. (HxWxD)	87 x 69 x 69 mm 3.4 x 2.7 x 2.7 in.	87 x 94 x 69 mm 3.4 x 3.7 x 2.7 in.
Publication, Installation Instructions	1794-IN008	1794-IN018

(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.

Environmental Specifications

Attribute	Value
Temperature, operating	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock) : -20…55 °C -4…131 °F)
Temperature, surrounding air, max	55 °C (131 °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): 5…95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, Operating) IEC 60068-2-6 (Test Fc, Operating): 5 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: Group 1, 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 power ports ±2 kV at 5 kHz on communications ports
Surge transient immunity	IEC 61000-4-5: ±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

Certifications

Certification[1] (When marked on product)	Value
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.

Certifications

Certification[1] (When marked on product)	Value
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)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN 60079-0; General Requirements II 3 G Ex nA IIC T4 Gc
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 http://www.rockwellautomation.com/products/certification/ for Declaration of Conformity, Certificates, and other certification details.

1794-ACN15/D, 1794-ACN15K/D, 1794-ACNR15/D, 1794-ACNR15XT/D

FLEX I/O ControlNet adapter module, FLEX I/O ControlNet redundant media adapter module, and FLEX I/O ControlNet extreme temperatures redundant media adapter module

Technical Specifications

Attribute	1794-ACN15/D, 1794-ACN15K/D	1794-ACNR15/D, 1794-ACNR15XT/D
I/O module capacity	8	
Communication rate	5 Mbps	
Indicators	I/O Status – red/green Comm A – red/green Comm B – red/green	
ControlNet protocol	v1.25	
ControlNet port	1 ControlNet BNC	2 ControlNet BNC
Power consumption, max	400 mA, from external 24V supply	
Input voltage range	19.2V…31.2V DC	
Input voltage, nom	24V DC	
Inrush current	14 A for 2 ms	
FlexBus output current, max	640 mA @ 5V DC	
Isolation voltage	50V (continuous), Basic Insulation Type Type tested @ 860 V AC for 60 s, power to system, power to ControlNet, and ControlNet to system No isolation between ControlNet channels	
Power dissipation, max	3.4 W @ 19.2V DC	
Thermal dissipation	15.7 BTU/hr @ 19.2V DC	
Terminal screw torque	0.8 Nm (7 in-lb.)	
ControlNet cable	Allen-Bradley RG-6/U Quad shield coax part number 1786-RG6 (standard-PVC CM-CL2) or 1786-RG6F/A (high-flex)	
Wire size, power connection	Single wire connection: 0.33…3.31 mm^2 (22…12 AWG) solid or stranded copper wire rated @ 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max Double wire connection: 0.33…2.11 mm^2 (22…16 AWG) solid or stranded (not intermixed) copper wire rated @ 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max	

Technical Specifications

Attribute	1794-ACN15/D, 1794-ACN15K/D	1794-ACNR15/D, 1794-ACNR15XT/D
Wire category [(1)]	3 - on power ports 2 - on communication ports	
North American temperature code	T4A	
IEC temperature code	T4	
Dimensions, approx. (HxWxD)	87 x 94 x 92 mm 3.4 x 3.7 x 3.6 in.	
Weight, approx.	220 g (7.76 oz)	
Publication, Installation Instructions	1794-IN128	

(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.

Environmental Specifications

Attribute	Value
Temperature, operating	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): -20…55 °C (-4…131 °F) -20…70 °C (-4…158 °F) - **For 1794-ACNR15XT only**
Temperature, surrounding air, max	55 °C (131 °F) 70 °C (158 °F) - **For 1794-ACNR15XT only**
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): 5…95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 5 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: Group 1, 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 1kHz sine-wave 80% AM from 80… 2000 MHz 10V/m with 200Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1kHz sine-wave 80% AM from 2000…2700 MHz
EFT/B immunity	IEC 61000-4-4: ±2 kV @ 5 kHz on power ports ±2 kV @ 5 kHz on communications ports
Surge transient immunity	IEC 61000-4-5: ±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

Certifications

Certification[1] (When marked on product)	Value
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 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)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN 60079-0; General Requirements II 3 G Ex nA IIC T4 Gc
TÜV	TÜV Certified for Functional Safety: Capable of SIL 2
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
CI	ControlNet Int'l conformance tested to ControlNet specifications

(1) See the Product Certification link at http://www.rockwellautomation.com/products/certification/ for Declaration of Conformity, Certificates, and other certification details.

1794-ADN/C, 1794-ADNK/C

FLEX I/O DeviceNet adapter module and the FLEX I/O conformal coated DeviceNet adapter modules

Technical Specifications

Attribute	1794-ADN/C, 1794-ADNK/C
I/O module capacity	8
Communication rate	125 KB 250 KB 500 KB
Indicators	Power – on/off ModNet status – red/green I/O status – red/green
DeviceNet port	1 DeviceNet open-style 5- or 10-pin linear plug
DeviceNet power requirements, max	24V DC (±4 %) @ 90 mA
Power supply	The 24V DC power supply must be capable of providing a turn-on inrush surge current of 14 A for 5 ms for each adapter connected to this supply.
Input voltage range	19.2V. . .31.2V DC (includes 5% AC ripple)
Input voltage, nom	24V DC
Current draw	400 mA , max; 300 mA @ 24V DC
FlexBus output current, max	640 mA @ 5V DC
Isolation voltage	50V (continuous), Basic Insulation Type Type tested @ 1930V DC for 60 s, power to FlexBus, power to DeviceNet, and DeviceNret to FlexBus
Power dissipation, max	7.6 W @ 19.2V DC

Technical Specifications

Attribute	1794-ADN/C, 1794-ADNK/C
Thermal dissipation	26 BTU/hr @ 19.2V DC
Terminal screw torque	0.8 Nm (7 in-lb)
Wire size, power connections	0.33…3.31 mm^2 (22…12 AWG) solid or stranded copper wire rated @ 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation max
Wire category	1 - on power ports 2 - on communication ports
North American temperature code	T4
IEC temperature code	T4
Dimensions, approx. (HxWxD)	87 x 68 x 69 mm 3.4 x 2.7 x 2.7 in.
Weight, approx.	195.5 g (8.9 oz.)
Publication, Installation Instructions	1794-IN099

Environmental Specifications

Attribute	Value
Temperature, operating	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): -20…70 °C (-4…158 °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): 5…95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 5 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: Group 1, 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: ±4 kV @5 kHz on power ports ±4 kV @ 5 kHz on communication ports
Surge transient immunity	IEC 61000-4-5: ±1 kV line-line (DM) and ± 2kV line-earth (CM) on power ports ±2 kV line-earth (CM) on communication ports

Environmental Specifications

Attribute	Value
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150 kHz…80 MHz

Certifications

Certification[1] (When marked on product)	Value
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 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)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X Gc
DeviceNet	ODVA conformance tested to DeviceNet specifications

(1) See the Product Certification link at http://www.rockwellautomation.com/products/certification/ for Declaration of Conformity, Certificates, and other certification details.

1794-ASB/E, 1794-ASBK/E, 1794-ASBLT/D, 1794-ASB2/D

FLEX I/O remote I/O and conformal coated remote I/O adapter modules.

The 1794-ASB2 supports only two FLEX I/O modules The 1794-ASBLT is only for use with classic PLC-5/15 or PLC-5/25 processors.

ATTENTION: Do not use these Remote I/O adapters with the Classic PLC-5/15 or PLC-5/25 processors. Improper operation of the remote I/O may result.

- 1794-ASB, Series E
- 1794-ASB2, Series D
- 1794-ASB2K, Series D

Technical Specifications

Attribute	1794-ASB/E, 1794-ASBK/E, 1794-ASBLT/D	1794-ASB2/D
I/O module capacity	8	2
Communication rate	57.6 Kbps 115.2 Kbps 230.4 Kbps **NOTE:** PLC-5/15 and PLC-5/25 can only support 57.6 Kbps.	
Indicators	Power – green Adapter active – green Adapter fault – red Local fault – red	

Technical Specifications

Attribute	1794-ASB/E, 1794-ASBK/E, 1794-ASBLT/D	1794-ASB2/D
Power supply	The 24V DC power supply must be capable of providing a turn-on inrush surge current of 23 A for 2 ms for each adapter connected to this supply.	
Input voltage range	19.2V. . .31.2V DC DC (includes 5% AC ripple)	
Input voltage, nom	24V DC	
FlexBus output current, max	640 mA	
Isolation voltage	50V (continuous), Basic Insulation Type Type tested @ 750V DC for 60 s, power to system, power to RIO, and RIO to system Type tested @ 850V DC for 1 s, user power and FlexBus (**for 1794-ASBLT/D only**)	
Power consumption	7.9 W @ 24V DC	4.2 W @ 24V DC
Power supply 24V current load	330 mA	175 mA
Power dissipation, max	4.6 W @ 19.2V DC	3.4 W @ 19.2V DC
Thermal dissipation	15.7 BTU/hr @ 19.2V DC	11.6 BTU/hr @ 19.2V DC
Wire category (1)	2 - on communication ports 3 - on power ports	
Wire size Power and RIO	**Single wire:** 0.33... 3.31 mm^2 (22...12 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max **Double wire:** 0.33... 2.11 mm^2 (22...16 AWG) solid or stranded (not intermixed) copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max	
North American temperature code	T4A	
IEC temperature code	T4	
Dimensions, approx. (HxWxD)	87 x 68 x 69 mm 3.4 x 2.7 x 2.7 in.	
Publication, Installation Instructions	1794-IN110 - **for 1794-ASBLT/D** 1794-IN098 - **for 1794-ASB/E, 1794-ASBK/E, 1794-ASB2/D**	

(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.

Environmental Specifications

Attribute	Value
Temperature, operating	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock) -20. . .55 °C (-4. . .131 °F)
Temperature, surrounding air, max	55 °C (131 °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): 5. . .95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 5 g @ 10. . .500 Hz
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g

Environmental Specifications

Attribute	Value
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50 g
Emissions	CISPR 11: Group 1, Class A
ESD immunity	IEC 61000-4-2: 4 kV contact discharges - **for 1794-ASBLT/D only** 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 power ports ±2 kV at 5 kHz on communications ports
Surge transient immunity	IEC 61000-4-5: ±2 kV line-earth (CM) on communication ports
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150 kHz…80 MHz

Certifications

Certification[1] (When marked on product)	1794-ASB/E, 1794-ASBK/E, 1794-ASB2/D	1794-ASBLT/D
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)	
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions	
Ex	European Union 94/9/EC ATEX Directive, compliant with: • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X	—

(1) See the Product Certification link at http://www.rockwellautomation.com/products/certification/ for Declaration of Conformity, Certificates, and other certification details.

1794-APB, 1794-APBDPV1

FLEX I/O PROFIBUS adapter module and redundant media adapter module

Technical Specifications

Attribute	1794-APB/B	1794-APBDPV1
I/O module capacity	8	
Communication rate	All rates up to 12.0 Mbits/s	
Input voltage range	19.2V…31.2V DC (includes 5% AC ripple)	
Input voltage, nom	24V DC	
Input current, max	450 mA, 330 mA @ 24V DC	385 mA, 309 mA @ 24V DC
Inrush current	23 A for 2 ms	
FlexBus output current, max	640 mA @ 5V DC	
Isolation voltage	100% tested @ 850V DC for 1 s between user power and FlexBus	50V (continuous), Basic Insulation Type PROFIBUS to FLEX backplane to power Routine tested @ 850V DC for 1 s, PROFIBUS to Backplane to Power Type tested @ 850V AC for 60 s, PROFIBUS to Backplane to Power
Power dissipation, max	7.68W @ 19.2V DC	4.2W @ 19.2V DC
Thermal dissipation	26 BTU/hr @ 19.2V DC	14 BTU/hr @ 19.2V DC
PROFIBUS connector	9-pin D-shell	
PROFIBUS cable	Standard drop cable	
Terminal screw torque	0.8 Nm (7 in-lb)	
Wire size Power	3.31 mm^2 (12 AWG) stranded copper wire rated @ 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max	0.33... 3.31 mm^2 (22...12 AWG) solid or stranded copper wire rated @ 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max
Wire category	2(1)	1 - on power port(1) 2 - on communication ports
North American temperature code	T5	T4
IEC temperature code	—	T4
Dimensions, approx. (HxWxD)	87 x 69 x 69 mm 3.4 x 2.7 x 2.7 in.	
Publication, Installation Instructions	1794-IN087	1794-IN114

(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.

Environmental Specifications

Attribute	1794-APB/B	1794-APBDPV1
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…55 °C (32…131 °F)	
Temperature, surrounding air, max	55 °C (131 °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)	

Environmental Specifications

Attribute	1794-APB/B	1794-APBDPV1
Relative humidity	IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat): 5…95% noncondensing	
Vibration	IEC 60068-2-6 (Test Fc, Operating): 5 g @ 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: Group 1, Class A	
ESD immunity	IEC 61000-4-2: 4 kV contact discharges 8 kV air discharges	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 30… 2000 MHz	IEC 61000-4-3: 10V/m with 1 kHz sine-wave 80% AM from 80… 2500 MHz 3V/m with 1 kHz sine-wave 80% AM from 2500…2700 MHz
EFT/B immunity	IEC 61000-4-4: ±4 kV @ 2.5 kHz on power ports ±2 kV @ 5 kHz on communication ports	IEC 61000-4-4: ±2 kV @ 5 kHz on power ports ±2 kV @ 5 kHz on communication ports
Surge transient immunity	IEC 61000-4-5: ±1 kV line-line (DM), ±2 kV line-earth (CM) on signal ports	IEC 61000-4-5: ±2 kV line-earth (CM) on communication ports
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150 kHz…80 MHz	

Certifications

Certification[1] (When marked on product)	1794-APB/B	1794-APBDPV1
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 2004/108/IEC EMC Directive, compliant with: • EN 61000-6-2; Industrial Immunity • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)	
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions	
Ex	—	European Union 94/9/EC ATEX Directive, compliant with: • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN 60079-0; General Requirements II 3 G Ex nA II T4 X
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 http://www.rockwellautomation.com/products/certification/ for Declaration of Conformity, Certificates, and other certification details.

Important User Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication SGI-1.1 available from your local Rockwell Automation sales office or online at http://www.rockwellautomation.com/literature/) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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