Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

FLEX I/O 220V AC Digital Input and Output Modules

Catalog Numbers 1794-IM8, 1794-OM8

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.

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Updated Certifications	9
Added Additional Resources	10

Rockwell Automation

Specifications

Specifications – 220V AC Input Module 1794-IM8

Attribute	Value
Number of inputs	8, nonisolated
Recommended terminal base unit	1794-TBN, 1794-TBNK
Module mounting	See Figure 1 on page 9
On-state voltage: Min Nom Max	 159V AC 240V AC 264V AC
On-state current Min Max	 5.27 mA 13.21 mA
Off-state voltage, max	40V AC
Off-state current, max	2.6 mA
Nominal input impedance	22.3 kΩ
Nominal input current	12 mA @ 240V
Isolation voltage	250V (continuous), Basic Insulation Type, field side to backplane Type tested @ 1530V AC for 60 s No isolation between individual channels
Input filter time(1)	See Table 4 on page 6
Flexbus current	30 mA @ 5V DC
Power dissipation, max	4.7 W @ 264V AC
Thermal dissipation, max	16.2 BTU/hr @ 264V AC

(1) Input Off-to-On filter time is the time from a valid input signal to recognition by the module.
Input On-to-Off filter time is the time from the input signal dropping below the valid level to recognition by the module.

Specifications – 220V AC Output Module 1794-OM8

Attribute	Value
Number of outputs	8, nonisolated
Recommended terminal base unit	1794-TBN, 1794-TBNF, 1794-TBNK, 1794-TBNFK
Module mounting	See Figure 2 on page 9
Output voltage Min Nom Max	 159V AC 240V AC 264V AC
Output current rating	4.0 A (8 outputs @ 500 mA)
On-state current Min Max	 50 mA per output 500 mA per output @ 55 °C (131 °F)
On-state voltage drop, max	1.5V AC @ 0.5 A
Surge current	7 A for 40 ms each, repeatable every 8 seconds
Off-state leakage, max	2.5 mA
Isolation voltage	250V (continuous), Basic Insulation Type, field side to backplane Type tested @ 1530V AC for 60 s No isolation between individual channels
Output signal delay(1), max Off-to-On On-to-Off	 1/2 cycle 1/2 cycle
Flexbus current	60 mA @ 5V DC
Power dissipation, max	5.0 W @ 0.5 A
Thermal dissipation, max	17.1 BTU/hr @ 0.5 A
Fusing (when using the 1794-TBNF(2))	0.8 A, 250 slow-blow fuse (5 X 20 mm SAN-O MQ4-800 mA)

(1) Delay time is the time from the receipt of an output On or Off command to the output actually turning On or Off.
(2) Module outputs are not fused. We recommend that outputs be fused. If not using the 1794-TBNF, and fusing is desired, it must be provided externally.

General Specifications

Attribute	1794-IM8	1794-OM8
Terminal base screw torque	Determined by the installed terminal base	
Dimensions, approx. (H x W x D)	94 x 94 x 69 mm (3.7 x 3.7 x 2.7 in.)	
Indicators (field side indication)	8 yellow status indicators (customer device driven)	8 yellow status indicators (logic driven)
External AC power supply voltage, nom	240V AC	
External AC power supply input frequency	47…63 Hz	
External AC power voltage range	159…264V AC (See derating charts on page 9)	
North American temperature code	T4	T4A
Keyswitch position	8	
Enclosure type rating	None (open-style)	
Weight, approx.	100 g (3.53 oz)	85 g (3.00 oz)
Wire size	Determined by the installed terminal base	
Wiring category(1)	2 - on signal ports	

(1) Use this Conductor Category information for planning conductor routing as described in the appropriate System Level Installation Manual. Also see the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1 for more information.

Environmental Specifications

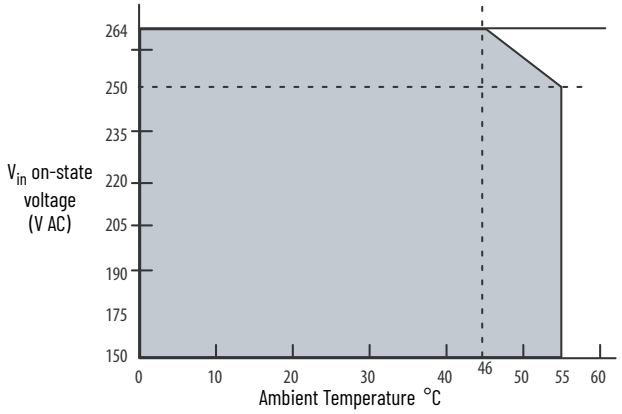
Attribute	Value
Operating temperature	IEC 60068-2-1 (Test Ad, operating cold), IEC 60068-2-2 (Test Bd, operating dry heat), IEC 60068-2-14 (Test Nb, operating thermal shock): 0…55 °C (32…131 °F)
Storage temperature	IEC 60068-2-1 (Test Ab, unpackaged nonoperating cold), IEC 60068-2-2 (Test Bb, unpackaged nonoperating dry heat), IEC 60068-2-14 (Test Na, unpackaged nonoperating thermal shock): -40…+85 °C (-40…+185 °F)
Temperature, surrounding air, max	55 °C (131 °F)
Relative humidity	IEC 60068-2-30 (Test Db, unpackaged damp heat): 5…95% noncondensing
Vibration	IEC60068-2-6 (Test Fc, operating): 5 g @ 10…500 Hz
Shock	IEC60068-2-27 (Test Ea, unpackaged shock): Operating 30 g Nonoperating 50 g
Emissions	IEC 61000-6-4
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 @ 5 kHz on power ports ±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

Certifications (when product is marked)[1]	Value
c-UL-us	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.
UK and CE	UK Statutory Instrument 2016 No. 1091 and European Union 2014/30/EU EMC Directive, compliant with: EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) EN 61000-6-4; Industrial Emissions UK Statutory Instrument 2016 No. 1101 and European Union 2014/35/EU LVD, compliant with: EN 61131-2; Programmable Controllers (Clause 11) UK Statutory Instrument 2012 No. 3032 and European Union 2011/65/EU RoHS, compliant with: EN 63000; Technical documentation
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Morocco	Arrêté ministériel n° 6404-15 du 29 ramadan 1436 Arrêté ministériel n° 6404-15 du 1 er muharram 1437

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

Figure 1 - Derating Curve for 1794-IM8

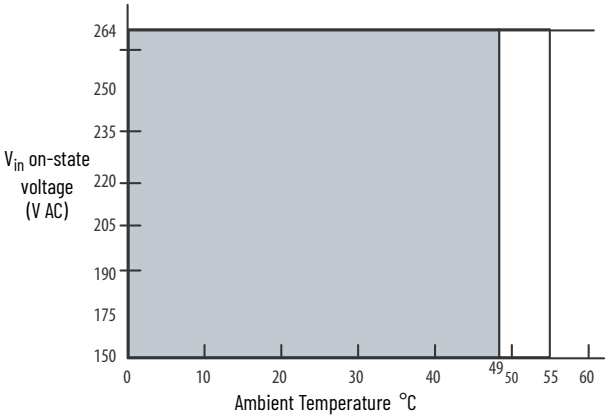


Voltage (max)	Temperature (max)
264	46
250	55

The area within the curve represents the safe operating range for the module under various conditions of user-supplied 220V AC supply voltages and ambient temperatures.

= All mounting positions (including normal horizontal, vertical, inverted horizontal) safe operating range

Figure 2 - Derating Curve for 1794-OM8



Mounting Position	Temperature (max)
Normal horizontal	55
Other mounting positions (including inverted horizontal, vertical)	49

The area within the curve represents the safe operating range for the module under various conditions of user-supplied 220V AC supply voltages and ambient temperatures.

= Normal mounting safe operating range. Includes ( )

= Other mounting positions (including inverted horizontal, vertical) safe operating range