Analog I/O Module Summary

Catalog Number	Inputs	Outputs	Terminal Base Unit	Module Type
1794-IE8	8	—	1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3T, 1794-TB3TS, 1794-TB3K, 1794-TB3SK, 1794-TB3TK, 1794-TB3TSK	Selectable, non-isolated inputs
1794-IE8XT				Selectable, non-isolated inputs, Extended temperatures
1794-IE8H			1794-TB3G, 1794-TB3GS, 1794-TB3GK, 1794-TB3GSK	Single-ended, non-isolated, HART-enabled inputs
1794-IE12	12			Single-ended inputs
1794-IF4I	4	—	1794-TBN, 1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3T, 1794-TB3TS, 1794-TBNK, 1794-TB3K, 1794-TB3SK, 1794-TB3TK, 1794-TB3TSK	Single-ended, isolated inputs
1794-IF4IXT				Single-ended inputs, Isolated, Extended temperatures
1794-IF8IH	8	—	1794-TB3, 1794-TB3S, 1794-TB3K, 1794-TB3SK	Single-ended, isolated, HART-enabled inputs
1794-IR8			1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3T, 1794-TB3TS, 1794-TBKD, 1794-TB3K, 1794-TB3SK, 1794-TB3TK, 1794-TB3TSK	Non-isolated relay inputs
1794-IRT8			1794-TB3G, 1794-TB3GS, 1794-TB3GK, 1794-TB3GSK	Non-isolated RTD/Thermocouple inputs
1794-IRT8XT				Non-isolated RTD/Thermocouple inputs, Extended temperatures
1794-IT8			1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3T, 1794-TB3TS, 1794-TB3K, 1794-TB3SK, 1794-TB3TK, 1794-TB3TSK[3]	Non-isolated, Thermocouple, Millivolt inputs
1794-IE4XOE2	4	2		Single-ended, non-isolated I/O
1794-IE4XOE2XT				Single-ended, non-isolated I/O, Extended temperatures
1794-IE8XOE4	8	4	1794-TB3G, 1794-TB3GS, 1794-TB3GK, 1794-TB3GSK	Single-ended, non-isolated I/O
1794-IF2XOF2I	2	2	1794-TBN, 1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3T, 1794-TB3TS, 1794-TBNK, 1794-TB3K, 1794-TB3SK, 1794-TB3TK, 1794-TB3TSK	
1794-IF2XOF2IXT				Single-ended, non-isolated I/O, Extended temperatures
1794-OE4	—	4		Selectable, non-isolated outputs
1794-OE4XT				Selectable, non-isolated outputs, Extended temperatures
1794-OE8H[1]		8	1794-TB3G, 1794-TB3GS, 1794-TB3GK, 1794-TB3GSK	Single-ended, non-isolated, HART-enabled outputs
1794-OE12[2]		12		Single-ended, non-isolated outputs
1794-OF4I		4	1794-TBN, 1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3T, 1794-TB3TS, 1794-TBNK, 1794-TB3K, 1794-TB3SK, 1794-TB3TK, 1794-TB3TSK	Source isolated outputs
1794-OF4IXT				Source isolated outputs, Extended temperatures
1794-OF8IH		8	1794-TB3, 1794-TB3S, 1794-TB3K, 1794-TB3SK	Single-ended, isolated, HART-enabled outputs

(1) Do not exceed length of 30 m (100 ft) for signal cabling.

(2) Not supported by 1747-SN or 1747-BSN for use on RIO with SLC controllers.

(3) 1794-TB2, 1794-TB3, 1794-TB3S for mV inputs only.

2 Input/2 Output Isolated Combination Module

Specification	1794-IF2XOF2I, 1794-IF2XOF2IXT
Normal mode rejection ratio	-3 dB @ 12 Hz (300 Hz conversion rate) -80.0 dB @ 50 Hz (300 Hz conversion rate) -3 dB at 6 Hz (150 Hz conversion rate) -80 dB at 60 Hz (150 Hz conversion rate)
Accuracy(1)	Current input or output: 0.1% Full Scale @ 25 °C Voltage input or output: 0.1% Full Scale @ 25 °C
Accuracy drift with temperature	Current input: 0.0038% Full Scale/°C Voltage input: 0.0028% Full Scale /°C Current output: 0.0025% Full Scale /°C Voltage output: 0.0012% Full Scale /°C
Input impedance	Current input: <100 Ω Voltage input: >1 MΩ(3)
Voltage input, overload, max	30V, single channel, continuous
Output resolution	15 bit + sign 0.656 μA/cnt 0.320 mV/cnt
Output conversion type	Digital-to-analog converter
Output conversion rate	2.5/5.0 ms
Current load on voltage output, max	3 mA
Resistive load on current output	0…750 Ω
Dimensions (HxWxD), approx	**1794-IF2XOF2I:** 46 x 94 x 53 mm (1.8 x 3.7 x 2.1 in.) 94 x 94 x 69 mm (3.7 x 3.7 x 2.7 in.) installed **1794-IF2XOF2IXT:** 46 x 94 x 75 mm (1.8 x 3.7 x 2.9 in.) 94 x 94 x 91 mm (3.7 x 3.7 x 3.6 in.) installed
Temperature, operating	**1794-IF2XOF2I:** 0…55 °C (32…131 °F) **1794-IF2XOF2IXT:** -20…70 °C (-4…185 °F)

(1) Includes offset, gain, non-linearity and repeatability error terms.

(2) Can be calibrated in field when necessary.

(3) If 24V DC is removed from the module, input resistance = 10 KΩ.

FLEX I/O Analog Output Modules

Analog Output Comparison

Catalog Number	Output Signal Range	External DC Supply Current, Nom	Power Dissipation, Max	Thermal Dissipation, Max
1794-OE4(1)	4…20 mA 0…20 mA ±10V 0…10V	70 mA @ 24V DC(2)	4.5 W @ 31.2V DC	15.3 BTU/hr @ 31.2V DC
1794-OE4XT		180 mA @ 10.5V DC		13.6 BTU/hr @ 31.2V DC
1794-OE8H	4…20 mA (user configurable) 0…20 mA (user configurable)	255 mA @ 24V DC	6.1 W	20.8 BTU/hr
1794-OE12	0 mA output until module is configured 4…20 mA (user configurable) 0…20 mA (user configurable)	320 mA @ 24V DC; 720 mA @ 10.0V DC	40 W @ 31.2V DC; 4.3 W @ 24V DC; 10.0 W @ 10.0V DC	14.7 BTU/hr @ 24V DC

HART Enabled Analog 8 Output Module

Specification	1794-OE8H
Calibration	—
Isolation voltage	50V (continuous), Basic Insulation Type No isolation between individual channels
Power dissipation, max	6.1 W
Thermal dissipation, max	20.8 BTU/hr
Wire size	0.34... 2.5 mm^2 (22...12 AWG) solid or stranded shielded copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max
Wire category	2 – on signal ports 2 – on power ports(1)
Dimensions (HxWxD), approx	46 x 94 x 75 mm (1.8 x 3.7 x 2.95 in.) 94 x 94 x 91 mm (3.7 x 3.7 x 3.6 in.) installed

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

1794-OE12 Analog 12 Output Module

1794-OE12 module is a High Density analog output module, capable of providing current in the range of 0...20mA or voltage in the range of ±10V, depending on the user configuration. Out of Range status bit exists for each channel.

Analog 12 Output Module

Specification	1794-OE12
Output resolution	320 μV/cnt 0.641 μA/cnt
Data format	Configurable
Output conversion type	Digital to analog converter
Output conversion rate	Outputs: DAC
Step response to 63% of FS, output	~70% 1st convert 96% 2nd convert 100% 3rd convert
Current load on voltage output, max	3 mA
Output current, resistive load	0…750 Ω over full power supply range
Accuracy	Current Output: 0.1% Full Scale at 25 °C Voltage Output: 0.1% Full Scale at 25 °C
Accuracy drift w/temp	Current Output: 0.004% Full Scale/°C Voltage Output: 0.004% Full Scale/°C
Calibration	None required
Isolation voltage	50V (continuous), Basic Insulation Type Type tested at 850V DC for 60 s, between field side and system No isolation between individual channels

Analog 12 Output Module

Specification	1794-OE12
Power dissipation, max	4.0 W @ 31.2V DC 4.3 W @ 24V DC 4.0 W @ 10.0V DC
Thermal dissipation, max	14.7 BTU/hr @ 24V DC
Wire size	0.34... 2.5 mm^2 (22...12 AWG) solid or stranded shielded copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max
Wire category	2 – on signal ports 2 – on power ports(1)
Dimensions (HxWxD), approx	46 x 94 x 53 mm (1.8 x 3.7 x 3.1 in.) 94 x 94 x 69 mm (3.7 x 3.7 x 2.7 in.) installed

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

1794-OF4I and 1794-OF4IXT Isolated Analog 4 Output Module

The 1794-OF4I modules provides 4 isolated outputs for 2-, 3-, and 4-wire output devices that use voltage in the range of ±10V or 0...20 mA current.

1794-OF4IXT is the extended temperature version of the 1794-OF4I module.

Isolated Analog 4 Output Module

Specification	1794-OF4I, 1794-OF4IXT
Output resolution	15 bit + sign 0.656 µA/cnt 0.320 mV/cnt
Data format	2's complement 2's complement percent binary offset binary
Output conversion type	Digital to analog converter
Output conversion rate	2.5/5.0 ms
Step response to 63% of FS, output	Current or voltage output: <25 µs
Current load on voltage output, max	3 mA
Output current, resistive load	0…750 Ω
Accuracy	Current input: 0.1% Full Scale @ 25 °C (77 °F) Voltage input: 0.1% Full Scale @ 25 °C (77 °F)(1)
Accuracy drift w/temp	Current input: 0.0025% Full Scale /°C Voltage input: 0.0012% Full Scale/°C
Calibration	Factory calibrated
Isolation voltage	120V (continuous), when used with 1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3T, or 1794-TB3TS 250V (continuous), when used with 1794-TBN Type tested at 1500V AC for 60 s, and 2550V DC for 1 s, channel to channel, I/O to system