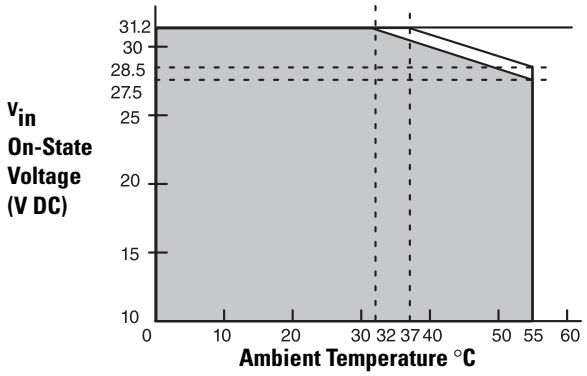
Digital DC Protected Output Comparison

Specification	1794-OB16P, 1794-OB16PXT	1794-OB8EP, 1794-OB8EPXT	1794-OB32P	1794-OV16P
Current, on-state output, max	500 mA per channel, 8 A per module	2.0 A per channel, 10 A per module	500 mA per channel, 14 A per module(2)	500 mA per channel, 8 A per module
Leakage current, off-state output, max	0.5 mA			
Output surge current, max	1.5 A for 50 ms, repeatable every 2 s	4 A for 50 ms, repeatable every 3 s	2 A for 50 ms, repeatable every 2 s	
Output delay time, OFF to ON, max	0.5 ms	0.1 ms	0.5 ms	
Output delay time, ON to OFF, max	1.0 ms	0.1 ms	1.0 ms	
External DC supply voltage range	10…31.2V DC (5% AC ripple)	19.2…31.2V DC (5% AC ripple)	10…31.2V DC (5% AC ripple)	
External DC supply current range	25…75 mA	20…35 mA	103…273 mA	20…65 mA
Power dissipation, max	5.0 W @ 31.2V DC	5.5 W @ 31.2V DC	5.3 W @ 31.2V DC	4.2 W @ 31.2V DC
Thermal dissipation, max	17.0 BTU/hr @ 31.2V DC	18.8 BTU/hr @ 31.2V DC	18.1 BTU/hr @ 31.2V DC	14.3 BTU/hr @ 31.2V DC
Dimensions (HxWxD), approx	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			
Isolation voltage	50V (continuous), Basic Insulation Type Type tested at 2121V DC for 60 s, between field side and system No isolation between individual channels	50V (continuous), Basic Insulation Type Type tested at 850V DC for 60 s, between field side and system **1794-OB8EPXT:** Type tested at 1500V AC for 60 s, between field side and system No isolation between individual channels		50V (continuous), Basic Insulation Type Type tested at 1770V DC for 60 s, between field side and system No isolation between individual channels

(1) See 1794-OB16P Derating Curve.

(2) 6.0 A total for channels 0…15; 8.0 A total for channels 16…31.

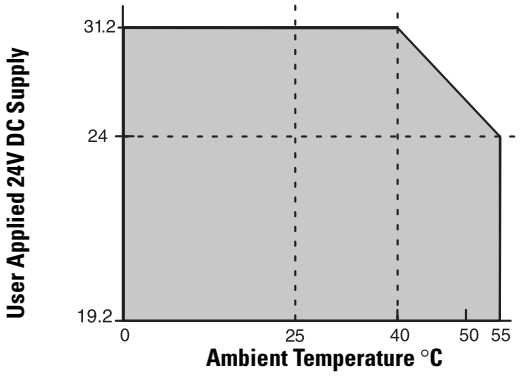
1794-OB16P Derating Curve



The area within the curve represents the safe operating range for the module under various conditions of user supplied 24V DC supply voltages and ambient temperatures.

□ = Normal mounting safe operating range ▭ included
▭ = Other mounting positions (including inverted horizontal, vertical) safe operating range

1794-IR8 Derating Curve



The area within the curve represents the safe operating range for the module under various conditions of user supplied 24V DC supply voltages and ambient temperatures.

= Safe operating area

1794-IRT8 and 1794-IRT8XT Thermocouple/RTD Input Module

The 1794-IRT8 is a high-speed, high-accuracy temperature/mV measuring module that accepts thermocouple inputs, 2-, 3-, and 4-wire RTD inputs, and mV source inputs.

The 1794-IRT8 offers the following:

- wire-off, over-range, and under-range detection
- good common mode rejection
- usage with long thermocouple wiring
- effective in noisy environments
- usage with grounded or ungrounded thermocouples
- more stability with ambient temperature changes than with the 1794-IR8 and the 1794-IT8

Release of Series B version provides capability to work with grounded thermocouples.

Use cold junction compensators 1794-CJC2 in thermocouple mode. Two cold junction compensators are shipped with the 1794-IRT8.

The 1794-IRT8XT is the extended temperature version of the 1794-IRT8 module. The module is conformal coated.

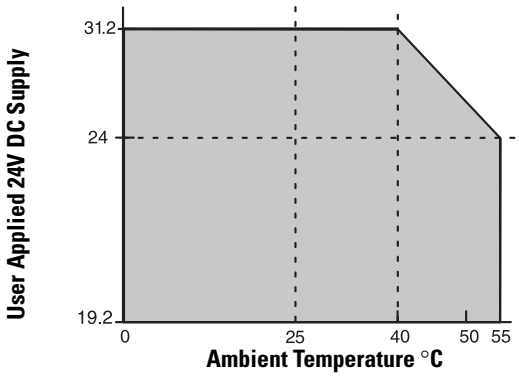
Thermocouple/mV Input Module

Specification	1794-IT8
Data format	16 bits, 2's complement; Offset binary (unipolar)
Settling time	100% of final value available at system throughput rate
Normal mode rejection ratio	60 dB @ 60 Hz
Common mode rejection ratio	-115 dB @ 60 Hz -100 dB @ 50 Hz
Common mode input range	± 10V
Accuracy(1)	With filter (max): 0.025% Full Scale @ 24 °C (±0.5 °C) Without filter (max): 0.05% Full Scale @ 24 °C (±0.5 °C)
System throughput	325 ms (1 channel scanned), programmable to 28 ms 2.6 s (8 channels scanned), programmable to 224 ms
Open input detection	Available at system throughput rate
Open circuit detection type	Out of range reading (upscale)
Overvoltage capability	35V DC, 25V AC continuous @ 25 °C 250V peak transient
Channel bandwidth	0…2.62 Hz (-3 dB)
RFI immunity	Error of <1% of range @ 10V/m, 27…1000 MHz
Input offset drift with temperature	+6 μV/°C max
Gain drift with temperature, max	10 ppm/ °C
Overall drift with temperature, max	50 ppm/ °C of span
Cold junction compensation range	0…70 °C
Cold junction compensation	A-B Cold Junction Compensation Kit, 1794-CJC(2)
Dimensions (HxWxD), approx	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

(1) The number is based on the hardware of the module only. Refer to the user manual for the complete error calculation procedure.

(2) Kit supplied with the module and contains 2 compensators.

1794-IRT8 Derating Curve



The area within the curve represents the safe operating range for the module under various conditions of user supplied 24V DC supply voltages and ambient temperatures.

= Safe operating area

1794-IE8XOE4 8 Input/4 Output Analog Combination Module

The 1794-IE8XOE4 is a combination module with 8 inputs and 4 outputs. Inputs can be configured individually for different modes, as can outputs. Inputs accept signals from 2, 3, and 4 wire input sensors in the ranges of ±10V or 0... 20 mA. Outputs produce signals in the range of ±10V or 0...20 mA.

8 Input / 4 Output Analog Combination Module

Specification	1794-IE8XOE4
Calibration	None required
Input conversion type	Successive approximation
Input conversion rate	8 ms all channels
Input resolution	16 bit, 2's complement 320 μV/cnt 0.641 μA/cnt
Data format	16 bits, 2's complement
Step response to 63% of FS, input	Current or voltage input: 1.3 s (0.09 s with Quick Step)
Step response to 63% of FS, output	-70% 1st convert 96% 2nd convert 100% 3rd convert
Normal mode rejection ratio	Voltage/current terminal: -3 dB @ 0.05 Hz; -20 dB/decade -52 dB @ 50 Hz -54 dB @ 60 Hz Voltage/current terminal with Quick Step: -3 dB @ 1.5 Hz; -20 dB/decade -29 dB @ 50 Hz -31 dB @ 60 Hz
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 or output: 0.004% Full Scale @ 25 °C Voltage input or output: 0.004% Full Scale @ 25 °C
Input impedance(2)	Current input: <100 Ω Voltage input: >1 MΩ
Voltage input, overload, max	30V, single channel, continuous
Output resolution	16 bit, 2's complement 320 μV/cnt 0.641 μA/cnt
Output conversion type	Digital-to-analog converter
Output conversion rate	Outputs: DAC
Current load on voltage output, max	3 mA
Resistive load on current output	0…750 Ω over full power supply range
Dimensions (HxWxD), approx	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

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

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