

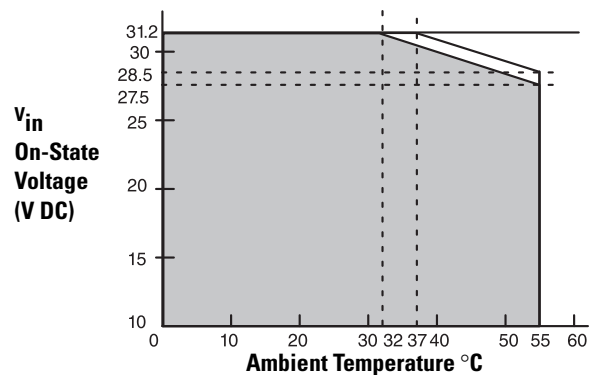
**Digital DC Protected Output Comparison**

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 <sup>(2)</sup>	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 <b>1794-OB8EPXT:</b> 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](#).

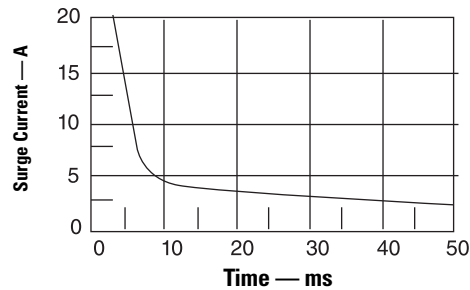
(2) 6.0 A total for channels 0...15; 8.0 A total for channels 16...31.

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

**1794-OB8EP Output Minimum Surge****FLEX I/O Digital DC Diagnostic Modules**

1794-IB16D is the diagnostic version of the 1794-IB16.

1794-OB16D is the diagnostic version of the 1794-OB16.

The modules can detect open wire, short circuit, and reverse polarity of external power. When the module detects a fault, the module fault LED status indicator lights up, the corresponding red channel LED status indicator lights up, and the corresponding module error bit (open wire, short circuit, or reverse power bit) is set. The reporting function provides results of the diagnostics as bits in its data table.

The modules have 16-bi-color channel LED status indicators and one red module status indicator. These indicators are driven from the customer field side power.

**Digital DC Diagnostic Input Module**

Specification	1794-IB16D
Voltage, on-state input, min	10V DC, sinking
Voltage, on-state input, nom	24V DC
Voltage, on-state input, max	31.2 DC <sup>(1)</sup>
Voltage, off-state input, max	5.0V DC
Current, on-state input, nom	8.2 mA @ 24V DC
Current, on-state input, max	12.1 mA @ 31.2V DC
Terminal base unit	1794-TB32, 1794-TB32S
Input impedance, max.	3.1 k $\Omega$
Current, on-state input, min	2.0 mA @ 10V DC
Current, off-state input, max	1.5 mA
Power dissipation, max	8.5 W @ 31.2V DC
Thermal dissipation, max	29 BTU/hr @ 31.2V DC
Detected reverse polarity voltage	10V min <sup>(2)</sup>
Sensor voltage drop, max	2.2V DC

## FLEX I/O Digital DC Combination Modules

The 1794-IB16XOB16P module has outputs that are self-protected against shorts, overload, and over temperature similar to the 1794-OB16P module.

The 1794-IB10XOB6 module requires the use of external fusing for individual outputs.

The 1794-IB10XOB6XT module is the extended temperature version of the 1794-IB10XOB6 module.

### Digital DC Combination Modules

Specification	1794-IB10XOB6, 1794-IB10XOB6XT <sup>(2)</sup>	1794-IB16XOB16P <sup>(3)</sup>
Terminal base unit	1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3K, 1794-TB3SK	1794-TB32, 1794-TB32S
Isolation voltage	50V (continuous), Basic Insulation Type Type tested at 1250V AC for 60 s, between field side and system Routine tested at 2121V DC for 1 s, between field side and system No isolation between individual channels	50V (continuous), Basic Insulation Type Tested at 2121V DC for 1 s, system to I/O and inputs to outputs
Power dissipation, max	6.0 W @ 31.2V DC	7.0 W @ 31.2V DC
Thermal dissipation, max	20.3 BTU/hr @ 31.2V DC	23.9 BTU/hr @ 31.2V DC
Number of inputs	10	16
Voltage, on-state input, min	10V DC	
Voltage, on-state input, nom	24V DC	
Voltage, on-state input, max	31.2V DC	
Current, on-state input, min	2.0 mA	
Current, on-state input, nom	8.0 mA @ 24V DC	
Current, on-state input, max	11.0 mA	12.1 mA
Voltage, off-state input, max	5V DC	
Current, off-state input, max	1.5 mA	
Input impedance, max	4.8 k $\Omega$	2.5 k $\Omega$
Number of outputs	6	16
Voltage, on-state output, min	10V DC	
Voltage, on-state output, nom	24V DC	
Voltage, on-state output, max	31.2V DC	
Voltage drop, on-state output, max	1V DC @ 2 A 0.5V DC @ 1 A	0.5V DC @ 0.5 A
Current, on-state output, min	1.0 mA per channel	
Current, on-state output, max	2.0 A per channel 10 A per module	0.5 A per channel 8 A per module

**Digital DC Combination Modules**

Specification	1794-IB10X0B6, 1794-IB10X0B6XT <sup>(2)</sup>	1794-IB16X0B16P <sup>(3)</sup>
Voltage, off-state output, max	31.2V DC	
Leakage current, off-state output, max	0.5 mA	
Output delay time, OFF to ON, max <sup>(1)</sup>	0.5 ms	
Output delay time, ON to OFF, max	1.0 ms	
Output surge current, max	4 A for 50 ms repeatable every 2 s	1.5 A for 50 ms repeatable every 2 s
Voltage, off-state input, max	5.0V DC	
Current, on-state input, min	7.1 mA	5.5 mA @ 74V AC, 47 Hz
Current, off-state input, min	1.5 mA	
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	
External DC supply voltage range	10...31.2V DC (includes 5% AC ripple)	
External DC supply current range	8 mA @ 10V DC 15 mA @ 19.2V DC 19 mA @ 24V DC 25 mA @ 31.2V DC	78 mA @ 10V DC

(1) Output OFF to ON or ON to OFF delay is the time from the module issuing an output on or off until the output actually turns on or off

(2) Module outputs are not fused. Fusing is recommended. If fusing is desired, you must supply external fusing. Use SAN-O MQ4-3A or Littelfuse 235-003.

(3) Outputs are electronically protected against overloads and shorts.

**FLEX I/O Digital Contact Output Modules (Relay)**

The 1794-OW8 module provides 8 isolated Form A (normally open) contacts capable of switching up to 2 A at up to 230V AC and 125V DC.

Do not attempt to increase load current or wattage capability beyond the maximum rating by connecting two or more outputs in parallel. The slightest variation in relay switching time may cause one relay to momentarily switch the total load current. Apply only +24V DC power to the power terminals on the terminal base. Make certain that all relay wiring is properly connected before applying any power to the module.

Total current draw through the terminal base unit is limited to 10 A. Separate power connections to the terminal base unit may be necessary.

The use of external fuses or a fused terminal base is required for individual outputs.

The frequency input module isolated power supply consists of 1 isolated 24V DC power supply that provides 2 current limited outputs of 30 mA maximum (1 for each channel).

### 24V DC Input Frequency Module

Specification	1794-IJ2, 1794-IJ2XT
Processing time	≤ 4 ms
Input frequency, max	1...32 kHz w/sine wave 1...32 kHz w/square wave input
Frequency value, max	32,767 or 3,276.7 (dependent on range)
Input pulse width, min	20 μs
Voltage, on-state input, min	10V (24V IEC+1 proximity, encoder input or switch inputs)
Voltage, on-state input, nom	24V DC
Voltage, on-state input, max	Limited to isolated 24V DC power supply
Current, on-state input, min	2.0 mA
Current, on-state input, nom	9.0 mA
Current, on-state input, max	10.0 mA
Voltage, off-state input, max	5.0V DC on 24V DC IEC1 + terminal
Current, off-state input, max	1.5 mA into 24V DC IEC1 + terminal
Wire-off detection	0.4 mA for proximity, encoder, or contact switch with 50 kW shunt resistor
Impedance, frequency input	>5 kΩ for 50 mV extended magnetic pickup >5 kΩ for 500 mV magnetic pickup >10 kΩ for 3V vortex flowmeter >10 kΩ for 6V vortex flowmeter >2.5 kΩ for 24V DC IEC1+ proximity or encoder input >2.5 kΩ for 24V DC contact switch input
Impedance, gate input	>5 kΩ for 50 mV extended magnetic pickup >5 kΩ for 500 mV magnetic pickup >2.5 kΩ for 24V DC IEC1+ proximity or encoder input >2.5 kΩ for 24V DC contact switch input
Output voltage source	Customer supplied
Voltage, on-state output, min	10V DC
Voltage, on-state output, nom	24V DC
Voltage, on-state output, max	31.2V DC
Current, on-state output, min	1.0 mA per output
Current, on-state output, max	1.0 A per channel sourced out of module <sup>(1)</sup>
Output surge current, max	2 A for 50 ms, repeatable every 2 s
Voltage drop, on-state output, max	0.9V dc @ 1 A
Output control	Outputs individually assignable to: Frequency % Full Scale Acceleration alarm
Output switching time	Triggered by frequency alarm or acceleration alarm Turn On: < 0.5 ms Turn Off: < 1 ms