

Specifications for Inputs

Digital Inputs

Description	1766-L32AWA 1766-L32AWAA	1766-L32BWA, 1766-L32BWAA, 1766-L32BXB, 1766-L32BXBA	
		Inputs 0 through 11 (12 high-speed DC inputs)	Inputs 12 and higher (8 standard DC inputs)
On-state voltage range	79...132 V AC	4.5...24V DC, Class 2 (4.5...26.4V DC @ 60°C/140°F) (4.5...30V DC @ 30°C/86°F)	10...24V DC, Class 2 (10...26.4V DC @ 60°C/140°F) (10...30V DC @ 30°C/86°F)
Off-state voltage range	0...20 V AC	0...1.5V DC	0...5V DC
Operating frequency	47...63 Hz	0 Hz...100 kHz	0 Hz...1 kHz (scan time dependent)
On-state current min nom max	5.0 mA @ 79 V AC 12 mA @ 120 V AC 16.0 mA @ 132 V AC	7.1 mA @ 4.5V DC 9.9 mA @ 24V DC 10.5 mA @ 30V DC	3.2 mA @ 10V DC 5.3 mA @ 24V DC 5.5 mA @ 30V DC
Off-state leakage current	2.5 mA max.	0.2 mA max.	1.5 mA max.
Nominal impedance	12 kΩ @ 50 Hz 10 kΩ @ 60 Hz	2.4 kΩ	4.5 kΩ
Inrush current (max.) @ 120V AC	250 mA		

Analog Inputs

Description	1766-L32AWAA, -L32BWAA, -L32BXBA
Voltage input range	0...10.0V DC - 1 LSB
Type of data	12-bit unsigned integer
Input coding (0...10.0V DC - 1 LSB)	0...4,095
Voltage input impedance	>199 kΩ
Input resolution	12 bit
Non-linearity	±1.0% of full scale
Overall accuracy -20...60 °C (-4...140 °F)	±1.0% of full scale
Voltage input overvoltage protection	10.5 V DC
Field wiring to logic isolation	Non-isolated with internal logic

Analog Outputs

Description	1766-L32AWAA, -L32BWAA, -L32BXBA
Number of inputs	2 single-ended
Voltage output range	0...10 V DC - 1 LSB
Type of data	12 bit unsigned integer
Step response	2.5 ms @ 95%
Load range Voltage output	1 K Ω
Output resolution	12 bit
Analog output setting time	3 ms (max.)
Overall Accuracy -20...60 °C (-4...140 °F)	$\pm 1.0\%$ of full scale
Electrical isolation	Non-isolated with internal logic
Cable length	30 m (98 ft) shielded cable

Relay and FET Outputs

Description		1766-L32AWA, 1766-L32AWAA, 1766-L32BWA, 1766-L32BWAA	1766-L32BXB, 1766-L32BXBA
Maximum controlled load		1440 VA	1080 VA
Maximum Continuous Current:			
Current per channel and group common		2.5 A per channel 8A max channel 8...11 common	2.5 A per channel
Current per controller	at 150V max	28 A or total of per-point loads, whichever is less	
	at 240V max	20 A or total of per-point loads, whichever is less	

Relay Outputs

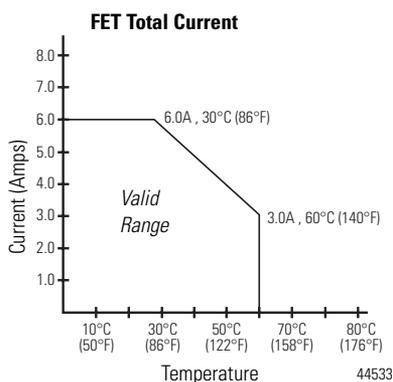
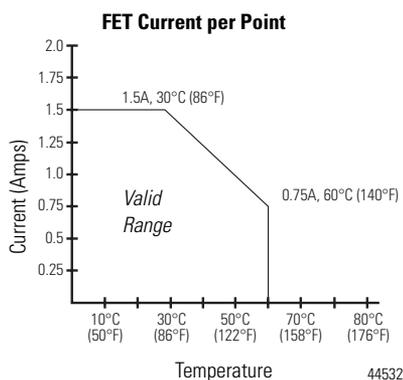
Description	1766-L32AWA, 1766-L32AWAA, 1766-L32BWA, 1766-L32BWAA, 1766-L32BXB, 1766-L32BXBA
Turn On Time/Turn Off Time	10 ms (maximum) ⁽¹⁾
Load current	10 mA (minimum)

⁽¹⁾ Scan time dependent

Maximum Volts	Amperes		Amperes Continuous	Volt-Amperes	
	Make	Break		Make	Break
240V AC	7.5 A	0.75 A	2.5 A	1800 VA	180 VA
120V AC	15.0 A	1.5 A	2.5 A	1800 VA	180 VA
250V DC	0.11 A		1.0 A	28 VA	
125V DC	0.22 A		1.0 A	28 VA	

1766-L32BXB, 1766-L32BXBA FET Output

Maximum output current (temperature dependent):



Description	General Operation	High Speed Operation ⁽¹⁾ (Output 2, 3 and 4 Only)
Power supply voltage	24V DC (-15%, 10%) Class 2	
On-state voltage drop: at max load current at max surge current	1V DC 2.5V DC	Not Applicable Not Applicable
Current rating per point max load min load max leakage	See graphic above 1.0 mA 1.0 mA	100 mA 20 mA 1.0 mA
Surge current per point: peak current max surge duration max rate of repetition @ 30 °C (86 °F) max rate of repetition @ 60 °C (140 °F)	4.0 A 10 ms once every second once every 2 seconds	Not Applicable Not Applicable Not Applicable Not Applicable

Description	General Operation	High Speed Operation ⁽¹⁾ (Output 2, 3 and 4 Only)
Turn-On Time (maximum)	11 μ s	28 ns
Turn-Off Time (maximum)	89 μ s	2.3 μ s

⁽¹⁾ Output 2, 3 and 4 are designed to provide increased functionality over the other FET outputs. Output 2, 3 and 4 may be used like the other FET transistor outputs, but in addition, within a limited current range, they may be operated at a higher speed. Output 2, 3 and 4 also provide a pulse train output (PTO) or pulse width modulation output (PWM) function.

Working Voltage

Working Voltage for 1766-L32AWA, 1766-L32AWAA

Description	Recommendation
Power supply input to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 second or 2596V DC for 1 second
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Input group to backplane isolation	Verified by one of the following dielectric tests: 1517V AC for 1 second or 2145V DC for 1 second
	132V AC Working Voltage (IEC Class 2 reinforced insulation)
Input group to input group isolation	Verified by one of the following dielectric tests: 1517V AC for 1 second or 2145V DC for 1 second
	132V AC Working Voltage (basic insulation)
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 second or 2596V DC for 1 second
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Output group to output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 second or 2596V DC for 1 second
	265V AC Working Voltage (basic insulation), 150V AC Working Voltage (IEC Class 2 reinforced insulation)