

Select Pico Controllers, I/O Pico Controllers and Accessories

Select Pico controllers for up to 20 I/O points. Add a Pico expansion I/O module for up to 40 I/O points.

Table 2 Pico Controllers Selection

Cat. No.	Line Power	Input Voltage Category	Number of Inputs (Digital)	Number of Outputs	Analog	Pico Variation
1760-L12AWA	120/240V ac	120/240V ac	8	4 (relay)	No	
1760-L12AWA-NC	120/240V ac	120/240V ac	8	4 (relay)		no real-time clock
1760-L12AWA-ND	120/240V ac	120/240V ac	8	4 (relay)		no display
1760-L18AWA	120/240V ac	120/240V ac	12	6 (relay)		
1760-L18AWA-EX	120/240V ac	120/240V ac	12	6 (relay)		I/O expandable
1760-L18AWA-EXND	120/240V ac	120/240V ac	12	6 (relay)		I/O expandable, no display
1760-L12NWN	24V ac	24V ac or 24V dc	8	4 (relay)	2 (0...0V dc)	
1760-L12NWN-ND	24V ac	24V ac or 24V dc	8	4 (relay)		no display
1760-L18NWN-EX	24V ac	24V ac or 24V dc	12	6 (relay)	4 (0...10V dc)	I/O expandable
1760-L18NWN-EXND	24V ac	24V ac or 24V dc	12	6 (relay)		I/O expandable, no display
1760-L12DWD	12V dc	12V dc	8 ⁽¹⁾	4 (relay)	2 (0...10V dc)	
1760-L12DWD-ND	12V dc	12V dc	8 ⁽¹⁾	4 (relay)		no display
1760-L18DWD-EX	12V dc	12V dc	12 ⁽¹⁾	6 (relay)	4 (0...10V dc)	I/O expandable
1760-L18DWD-EXND	12V dc	12V dc	12 ⁽¹⁾	6 (relay)		I/O expandable, no display
1760-L12BBB	24V dc	24V dc	8 ⁽¹⁾	4 (transistor)	2 (0...10V dc)	
1760-L12BBB-ND	24V dc	24V dc	8 ⁽¹⁾	4 (transistor)		no display
1760-L12BWB	24V dc	24V dc	8 ⁽¹⁾	4 (relay)		
1760-L12BWB-NC	24V dc	24V dc	8 ⁽¹⁾	4 (relay)		no real-time clock
1760-L12BWB-ND	24V dc	24V dc	8 ⁽¹⁾	4 (relay)		no display
1760-L18BWB-EX	24V dc	24V dc	12 ⁽¹⁾	6 (relay)		I/O expandable
1760-L18BWB-EXND	24V dc	24V dc	12 ⁽¹⁾	6 (relay)		I/O expandable, no display
1760-L20BBB-EX	24V dc	24V dc	12 ⁽¹⁾	8 (transistor)	4 (0...10V dc)	I/O expandable
1760-L20BBB-EXND	24V dc	24V dc	12 ⁽¹⁾	8 (transistor)		I/O expandable, no display

⁽¹⁾ Two of the digital dc inputs can alternately be used as 0...10V dc analog inputs. These inputs can be used as either digital or analog, not both. For example, you could use 2 analog inputs plus 10 digital inputs on the 1760-L18DWD-EX controller.

Pico Expansion I/O

Depending on which Pico controller you use, expansion I/O modules can provide up to 40 I/O points when used with expansion I/O modules.

You can only add one Pico expansion I/O module to each controller.

Specifications

Pico and Pico GFX-70 Specifications

Table 10 Environmental Specifications

Specification	Pico	Pico GFX-70
Operating temperature (Installed horizontally/vertically)	-25...55 °C (-13...131 °F)	-25...55 °C, (-13...131 °F)
Display legibility	-25...55 °C (-13...131 °F)	-5...50 °C, (-23...122 °F)
Storage/transport temperature	-40...70 °C (-40...158 °F)	-40...70 °C (-40...158 °F)
Relative humidity (IEC 60068-2-30)	5 to 95% non-condensing	5 to 95% non-condensing
Pollution degree	2	Power supply unit/CPU; inputs/outputs: 2 Display/keypad: 3
Degree of protection (EN50178, IEC 60529, VBG4)	IP20	Processor Unit; I/O :IP20 Display Unit: IP65
Vibration (IEC 60068-2-6)	Constant amplitude 0.15 mm: 10 ... 57 Hz Constant acceleration 2g: 57 ... 150 Hz	Constant amplitude 0.15 mm: 10 ... 57 Hz Constant acceleration 2g: 57 ... 150 Hz
Shock (IEC 60068-2-27)	18 shocks, semi-sinusoidal 15g/11 ms	18 shocks, semi-sinusoidal 15g/11 ms
Agency Certification	UL, CSA, CE Class 1, Division 2 Hazardous Location	UL, CSA, CE

Pico Controllers and Pico Expansion I/O Specifications

Table 11 Pico AC Controllers Power Supply Specifications

Incoming Power	1760-L12AWA 1760-L12AWA-NC 1760-L12AWA-ND	1760-L18AWA 1760-L18AWA-EX 1760-L18AWA-EXND 1760-IA12XOW6I	1760-L12NWN 1760-L12NWN-ND 1760-L18NWN-EX 1760-L18NWN-EXND
Rated value (sinusoidal)	110...240V ac +10/-15%	100...240V ac +10/-15%	24V ac, +10 / -15%
Range	90...264V ac	85...264V ac	20.4...26.4V ac
Frequency, rated value, tolerance	50/60 Hz, ±5%	50/60 Hz, ±5%	50/60 Hz, ±5%
Line Current			
at 115/120V ac 60 Hz	Nominal 40 mA	Nominal 70 mA	–
at 230/240V ac 50 Hz	Nominal 20 mA	Nominal 35 mA	–
at 24V ac 50/60 Hz	–	–	Nominal 200 mA (1760-L12) Nominal 300 mA ((1760-L18)
Voltage dips	20 ms, EN 61131-2	20 ms, EN 61131-2	20 ms, EN 61131-2
Power Consumption			
at 115/120V ac	Nominal 5 VA	Nominal 10 VA	–
at 230/240V ac	Nominal 5 VA	Nominal 10 VA	–
at 24V ac	–	–	Nominal 5 VA (1760-L12) Nominal 7 VA (1760-L18)

Table 12 Pico DC Controllers Power Supply Specifications

Incoming Power	1760-L12DWD 1760-L12DWD-ND	1760-L18DWD-EX 1760-L18DWD-EXND	1760-L12BBB 1760-L12BBB-ND 1760-L12BWB 1760-L12BWB-NC 1760-L12BWB-ND	1760-L18BWB-EX 1760-L20BBB-EX 1760-L20BBB-EXND 1760-IB12XOW6I 1760-IB12XOB8
Rated voltage				
Rated value	12V dc, +30%, -15%	12V dc, +30%, -15%	24V dc, +20%, -15%	24V dc, +20%, -15%
Range	10.2...15.6V dc	10.2...15.6V dc	20.4...28.8V dc	20.4...28.8V dc
Residual ripple	≤5%	≤5%	≤5%	≤5%
Input current	Nominal 140 mA at 12V dc	Nominal 200 mA at 12V dc	Nominal 80 mA at 24V dc	Nominal 140 mA at 24V dc
Voltage dips	10 ms, EN 61131-2	10 ms, EN 61131-2	10 ms, EN 61131-2	10 ms, EN 61131-2
Power dissipation at 24V dc	Nominal 2W	Nominal 3.5W	Nominal 2W	Nominal 3.5W

Table 13 Pico 24V ac Controllers Input Specifications

Specification	1760-L12NWN 1760-L12NWN-ND	1760-L18NWN-EX 1760-L18NWN-EXND
Number of digital inputs	8	12
Rated voltage	24V ac	24V ac
Off-state voltage	0...6V ac	0...6V ac
On-state voltage	14...26.4V ac	14...26.4V ac
Rated frequency	50/60 Hz	50/60 Hz
Input current I1 to I6 (1760-L18NWN-xx also I9 to I10)	4 mA at 24V ac 50 Hz	4 mA at 24V ac 50 Hz
Input current I7, I8 (1760-L18NWN-xx also I11 and I12)	2 mA at 24V ac 50 Hz, 2 mA at 24V	2 mA at 24V ac 50 Hz, 2 mA at 24V
Signal delay	Debounce On: 80 ms (50 Hz), 66.66 ms (60 Hz) Debounce Off: 20 ms (50 Hz), 16.66 ms (60 Hz)	Debounce On: 80 ms (50 Hz), 66.66 ms (60 Hz) Debounce Off: 20 ms (50 Hz), 16.66 ms (60 Hz)
Number of analog inputs	2	4
Input Type	dc voltage	dc voltage
Signal Range	0...10V dc	0...10V dc

Table 14 Pico 120/240V ac Controllers and Expansion I/O Input Specifications

Specification	1760-L12AWA 1760-L12AWA-NC 1760-L12AWA-ND	1760-L18AWA 1760-L18AWA-EX 1760-L18AWA-EXND 1760-IA12XOW6I⁽¹⁾
Number of digital inputs	8	12
Rated voltage (sinusoidal)	120/240V ac	120/240V ac
Off-state voltage	0...40V ac	0...40V ac
On-state voltage	79...264V ac	79...264V ac
Rated frequency	50/60 Hz	50/60 Hz

Table 14 Pico 120/240V ac Controllers and Expansion I/O Input Specifications

Specification	1760-L12AWA 1760-L12AWA-NC 1760-L12AWA-ND	1760-L18AWA 1760-L18AWA-EX 1760-L18AWA-EXND 1760-IA12XOW6I ⁽¹⁾
Input current R1 to R12, I1 to I6 (1760-L18AWA-xx also I9 to I12)	0.5 mA at 230V ac 50 Hz, 0.25 mA at 115V ac 60 Hz	0.5 mA at 230V ac 50 Hz 0.25 mA at 115V ac 60 Hz
Input current I7, I8	6 mA at 230V ac 50 Hz, 4 mA at 115V ac 60 Hz	6 mA at 230V ac 50 Hz, 4 mA at 115V ac 60 Hz
Signal delay I1 to I6 and I9 to I12 from 0 to 1 and from 1 to 0	Debounce On: 80 ms (50 Hz), 66.66 ms (60 Hz) Debounce Off: 20 ms (50 Hz), 16.66 ms (60 Hz)	
Signal delay Delay time I7, I8 from 1 to 0	Debounce On: 160 ms (50 Hz), 150 ms (60 Hz) Debounce Off: 100 ms (50 Hz/60 Hz)	Debounce On: 80 ms (50 Hz), 66.66 ms (60 Hz) Debounce Off: 20 ms (50 Hz), 16.66 ms (60 Hz)
Signal delay I7, I8 from 0 to 1	Debounce On: 80 ms (50 Hz), 66.66 ms (60 Hz) Debounce Off: 20 ms (50 Hz), 16.66 ms (60 Hz)	

⁽¹⁾ Delay times for expansion modules are circuit delays only. Additional time is needed to transfer the status to the controller.

Table 15 Pico DC Controllers and Expansion I/O Input Specifications

Specification	1760-L12DWD 1760-L12DWD-ND 1760-L18DWD-EX 1760-L18DWD-EXND	1760-L12BBB 1760-L12BBB-ND 1760-L12BWB 1760-L12BWB-NC 1760-L12BWB-ND	1760-L18BWB-EX 1760-L18BWB-EXND 1760-L20BBB-EX 1760-L20BBB-EXND 1760-IB12XOB8 ⁽¹⁾ 1760-IB12XOW6I
Number of digital inputs	8 (1760-L12DWD-xx) 12 (1760-L18DWD-xx)	8	12
Inputs usable as analog inputs	2 inputs (I7 and I8),		4 inputs (I7, I8, I11, I12) for 1760-L18xxx and 1760-L20xxx
Inputs usable as high-speed inputs (I1, I2, I3, I4)	4	4	4 (1760-L18xxx and 1760-L20xxx)
Rated Voltage	12V dc	24V dc	24V dc
Off-state Voltage	4.0V dc I1 to I8	< 5.0V dc	< 5.0V dc (I1 to I12, R1 to R12)
On-state Voltage	8V dc I1 to I8	<ul style="list-style-type: none"> • 15...28.8V dc (I1 to I6) • 8...28.8V dc (I7, I8) 	<ul style="list-style-type: none"> • 15...28.8V dc (I1 to I6, I9 to I12, R1 to R12) • 8...28.8V dc (I7, I8)
On-state Current	<ul style="list-style-type: none"> • 3.3 mA at 12V dc (I1 to I6) (and I9 to I12 for 1760-L18DWD-xx) • 1.1 mA at 12V dc (I7, I8) 	<ul style="list-style-type: none"> • 3.3 mA at 24V dc (I1 to I6) • 2.2 mA at 24V dc (I7, I8) 	<ul style="list-style-type: none"> • 3.3 mA at 24V dc (I1 to I6, I9 to I12, R1 to R12) • 2.2 mA at 24V dc (I7, I8)
Signal delay, 0 to 1	Debounce On: 20 ms Nominal 0.3 ms	Debounce On: 20 ms Debounce Off: Nominal 0.25 ms	Debounce On: 20 ms Debounce Off: Nominal 0.25 ms
Signal delay, 1 to 0	Debounce On: 20 ms Debounce Off: Nominal 0.3 ms (I1 to I6 and I9 to I10 1760-L18xxx) Nominal 0.35 ms (I7, I8 and I11 to I12 1760-L18xxx)	Debounce On: 20 ms Debounce Off: Nominal 0.4 ms (I1 to I6) Nominal 0.2 ms (I7, I8)	Debounce On: 20 ms Debounce Off: Nominal 0.4 ms (I1 to I6) Nominal 0.2 ms (I7, I8)

Fill in the Selection Worksheet

Catalog Number	Description	Pieces per Package	Quantity Selected
Programming Software and Cable			
1760-PICOSOFTPRO ⁽¹⁾	PicoSoft Pro Programming Software	1	
1760-CBL-PM02	Programming Cable, PC to Pico Processor		
1760-CBL-PC02	Programming Cable, PC to Pico GFX Processor	1	
1760-PICOPRO-PC02	PicoSoft Pro Software and Pico GFX Cable Kit	1	
Communications Module			
1760-DNET	Pico DeviceNet Module	1	
Pico Controllers			
1760-L12AWA	Pico 12-Point AC Controller	1	
1760-L12AWA-NC	Pico 12-Point AC Controller without Real-Time Clock	1	
1760-L12AWA-ND	Pico 12-Point AC Controller without Display	1	
1760-L12BBB	Pico 12-Point DC Controller	1	
1760-L12BBB-ND	Pico 12-Point DC Controller without Display	1	
1760-L12BWB	Pico 12-Point DC Controller	1	
1760-L12BWB-NC	Pico 12-Point DC Controller without Real-Time Clock	1	
1760-L12BWB-ND	Pico 12-Point DC Controller without Display	1	
1760-L12DWD	Pico 12-Point AC Controller	1	
1760-L12DWD-ND	Pico 12-Point AC Controller without Display	1	
1760-L12NWN	Pico 12-Point AC Controller	1	
1760-L12NWN-ND	Pico 12-Point AC Controller without Display	1	
1760-L18AWA-EX	Pico 18-Point AC Controller I/O Expandable	1	
1760-L18AWA-EXND	Pico 18-Point AC Controller I/O Expandable without Display	1	
1760-L18BWB-EX	Pico 18-Point DC Controller I/O Expandable	1	
1760-L18BWB-EXND	Pico 18-Point DC Controller I/O Expandable without Display	1	
1760-L18DWD-EX	Pico 18-Point DC Controller I/O Expandable	1	
1760-L18DWD-EXND	Pico 18-Point DC Controller I/O Expandable without Display	1	
1760-L18NWN-EX	Pico 18-Point AC Controller I/O Expandable	1	
1760-L18NWN-EXND	Pico 18-Point AC Controller I/O Expandable without Display	1	
1760-L20BBB-EX	Pico 20-Point DC Controller I/O Expandable	1	
1760-L20BBB-EXND	Pico 20-Point DC Controller I/O Expandable without Display	1	
Pico Expansion I/O Modules			
1760-IA12XOW6I	(12) 120/240V ac inputs, (6) isolated relay outputs	1	
1760-IB12XOB8	(12) 24V dc inputs, (8) transistor outputs	1	
1760-IB12XOW6I	(12) 24V dc inputs, (6) isolated relay outputs	1	
1760-OW2	(2) relay outputs	1	
1760-RPLCONN	Expansion Module Connector - included with expansion module. Catalog number listed is replacement part.	1	
Pico GFX-70 Processor Units			
1760-LDF	Pico GFX-70 DC Processor Unit	1	
1760-LDFA	Pico GFX-70 AC Processor Unit	1	
1760-LDFC	Pico GFX-70 DC Processor Unit with Pico-Link Terminal	1	
1760-LDFCA	Pico GFX-70 AC Processor Unit with Pico-Link Terminal	1	
Pico Remote Processor Units			
1760-RM-PICO	Pico Remote Processor Unit	1	