

Shields

P1AM-ETH

Ethernet Communications Shield

The P1AM-ETH is a housed Arduino Compatible Ethernet Shield based on the Wiznet W5500 Ethernet Controller. It inter-

faces to the left side of the P1AM-100 CPU and most Arduino MKR form factor shields.

Ethernet Features

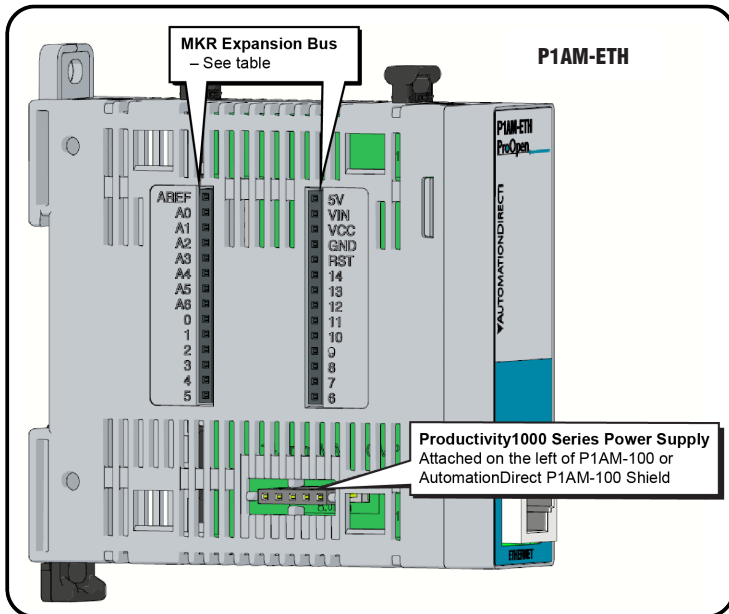
- Supports Hardwired TCP Protocols: TCP, UDP, ICMP, IPV4, ARP, IGMP, PPPOE
- Supports 8 independent sockets simultaneously
- Supports Power Down Mode
- Supports Wake on LAN over UDP
- Supports High Speed Serial Peripheral Interface (SPI MODE 0, 3)
- Internal 32K bytes of Memory for TX/RX Buffers
- 10BaseT / 100BaseTX Ethernet PHY embedded
- Supports Auto Negotiation (Full and Half Duplex, 10 and 100-based)
- Does Not Support IP Fragmentation
- 3.3 V operation with 5V I/O signal tolerance
- LED outputs (Full / Half duplex, Link, Speed, Active)



General Specifications	
Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	-20° to 70°C (-4° to 158°F)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Heat Dissipation	750mW
Enclosure Type	Open Equipment
Power Budget	150mA/5V
Recommended Library	Arduino Ethernet
Module Location	Connects to the left side of the P1AM-100 CPU.
Weight	20g (0.8 oz.)
Agency Approvals	UL 61010-1 and UL 61010-2-201 File E139594, Canada & USA CE

!WARNING!

Do not add or remove modules with field power applied!



MKR Expansion Bus Pins	
GPIO	A0–A6, 0–14
Analog Input Pins	A0–A6
Analog Output Pins	A0
PWM Pins	0–8, 10, A3, A4
Interrupt Pins	0, 1, 4–8, A1, A2
5V	5V supply output
Vin	5V regulated supply
VCC	3.3 V supply output
GND	Ground
RST	Reset
AREF	Analog Input Reference

Critical Notes:

- Pins A3, A4, and 8–10 are used for the base controller.
- Do not exceed 46mA combined from pins 0, 1, and 4–10.
- Do not exceed 3.3 V on any I/O pin.
- Do not exceed 7mA on any I/O pin.
- Do not apply power to 5V or VCC

Header Pins Used for Ethernet Shield		
Pins Used	Function	
5	ETH SS	
8	MOSI	SPI pins are shared with other devices on SPI bus
9	SCK	
10	MISO	

Productivity[®]Open Overview

ProductivityOpen leverages the modern processing power of Arduino and the proven industrial value of the Productivity1000 input and output modules. Make use of the wide variety of Arduino MKR form factor shields.

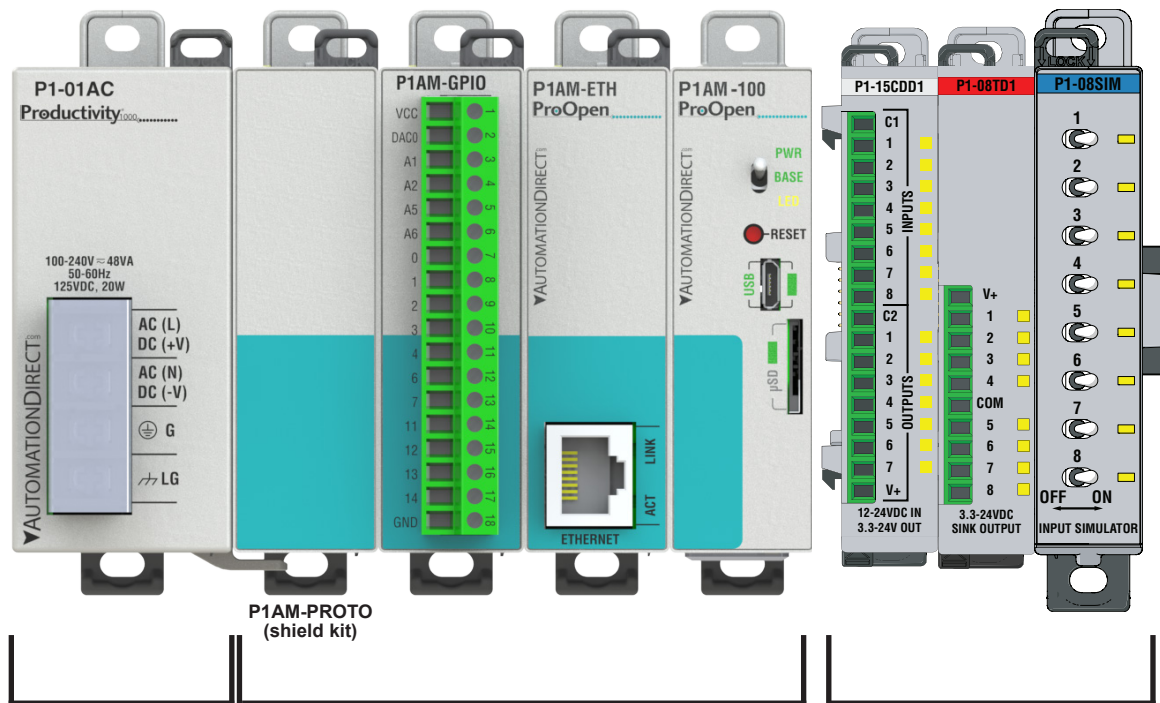
The P1AM-100 module is programmed with the Arduino IDE or ProductivityBlocks, an optional proprietary block programming environment.

Features

- Supports Productivity1000 inputs and outputs modules
- Supports Arduino MKR form factor shields
- UL listed CPU
- UL listed ProductivityOpen branded shields



Productivity [®] Open Modules		
Part Number	Price	Description
P1AM-100		Arduino compatible CPU
P1AM-ETH		Ethernet shield
P1AM-GPIO		Extended I/O shield
P1AM-PROTO		Custom housing kit
P1AM-START1		Maker community start kit
P1AM-START2		Industrial community start kit



Productivity1000 Power Supply

The power of Arduino in ProductivityOpen.

Productivity1000 Input and Output Modules

Productivity® Open Overview

Productivity1000 I/O Modules

A variety of discrete and analog I/O modules from our Productivity1000 line are available for use with the P1AM-100.

Productivity1000 Modules			
Part Number	Number of Inputs	Description	
Input Modules			
P1-08SIM	8	Input Simulator Module	
P1-08ND3	8	Sinking/Sourcing 12–24 VDC Input	
P1-16ND3	16	Sinking/Sourcing 12–24 VDC Input	
P1-08NE3	8	Sinking/Sourcing 24V AC/DC	
P1-16NE3	16	Sinking/Sourcing 24V AC/DC	
P1-08NA	8	AC Isolated 100–240 VAC	
Output Modules			
	Number of Outputs		
P1-08TD1	8	Sinking DC Output	
P1-08TD2	8	Sourcing DC Output	
P1-15TD1	15	Sinking DC Output	
P1-15TD2	15	Sourcing DC Output	
P1-08TA	8	AC Output	
P1-08TRS	8	Isolated Relay Output	
P1-16TR	16	Relay Output	
Input/Output Modules			
	Inputs	Outputs	
P1-15CDD1	8	7	Input: Sinking/Sourcing; Output: Sinking
P1-15CDD2	8	7	Input: Sinking/Sourcing; Output: Sourcing
P1-16CDR	8	8	Input: Sinking/Sourcing; Output: Relay

Productivity1000 Modules			
Part Number	Number of Inputs	Description	
Input Modules			
P1-04AD	4	Analog Input (Current)	
P1-04ADL-1	4	Analog Input (Current)	
P1-04ADL-2	4	Analog Input (Voltage)	
P1-08ADL-1	8	Analog Input (Current)	
P1-08ADL-2	8	Analog Input (Voltage)	
P1-04RTD	4	RTD Input	
P1-04THM	4	Analog Thermocouple Input	
P1-04NTC	4	Analog Thermistor Input	
Output Modules			
	Number of Outputs		
P1-04DAL-1	4	Analog Output (Current)	
P1-04DAL-2	4	Analog Output (Voltage)	
P1-08DAL-1	8	Analog Output (Current)	
P1-08DAL-2	8	Analog Output (Voltage)	
Input/Output Modules			
	Inputs	Outputs	
P1-4ADL2DAL-1	4	2	Analog Input/Analog Output (Current)
P1-4ADL2DAL-2	4	2	Analog Input/Analog Output (Voltage)

