

ProductivityOpen CPU & Productivity1000 TTL I/O Modules

Productivity®



WHAT'S UP WITH

AUTOMATIONDIRECT.com

The common sense way to buy industrial controls

2024 ISSUE 1

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Playing Favorites

We all have favorites (favourites for any of our Canadian customers) like a favorite restaurant, favorite coffee, favorite sports team, favorite actor/actress, or you might even have a favorite spoon to cook with (I can't be the only one!). When we find something great, we usually stick with it. But having a favorite can be not so good at times, like when your favorite restaurant closes for renovations, your preferred coffee goes out of stock, your sports team loses the championship, or your #1 spoon goes missing. I mean how does a spoon just vanish? It was here and now it's not and I know it's 'cause the kids misplaced it but they swear they haven't seen it or.... oh, sorry, I got a little distracted there. Anyway, at AutomationDirect we hope to be the "great" that you have found when it comes to your automation component needs, and we are working every day to bring on new products to ensure we always have what you're looking for. So, thanks for sticking with us and we hope to continue being your favorite/favourite industrial automation supplier in 2024 and beyond!

- The AutomationDirect Team

NEW PRODUCTIVITYOPEN CPU & PRODUCTIVITY1000 I/O MODULES

I/O Modules
starting at:
\$48

P1AM-200 Open-Source CPU

The new P1AM-200 open-source CPU is the latest addition to the ProductivityOpen line of Arduino compatible industrialized open-source controllers. This CPU can be programmed in C++ using the Arduino IDE or in CircuitPython using any text editor. CircuitPython, a derivative of the Python programming language specifically built for microcontrollers, uses a runtime interpreter instead of a compiler for more flexibility with code editors and code syntax.

- Up to 16MB of flash memory for code and file storage
- 120MHz processor
- Crypto coprocessor for higher performance when using encryption libraries
- Neo-pixel RGB LED for visualization of the CPU program status
- Can utilize Productivity1000 series I/O modules and most Arduino MKR form factor shields for easy connections to a wide variety of devices

Productivity1000 DC I/O Modules

Two new DC I/O modules, the P1-08ND-TTL and P1-08TD-TTL, expand Productivity1000 and ProductivityOpen capabilities by including support for low-voltage TTL devices.



www.automationdirect.com/programmable-controllers

- 3.3 to 5 VDC input and 5 VDC output versions
- 8 points per module

Productivity Suite version 4.1

Productivity Suite version 4.1 provides even more versatility for all Productivity PLC families. New features include MQTTs support (P2-622 CPU only), a new MMSEQ motion control instruction, and more.

TOSHIBA EQP AND U.S. MOTORS ACCU-TORQ MOTORS

starting at:
\$370

Toshiba EQP Global SD Severe Duty Motors

The EQP SD series motors, from Toshiba, are designed to withstand the most severe conditions. Most AC motor failures are due to failed bearings, so these inverter-duty motors feature oversized 300-series bearings for maximum longevity.

- Available in 230/460 VAC voltages
- Horsepower sizes ranging from 1/4 hp up to 100 hp
- Speeds of 1200, 1800, or 3600 rpm
- NEMA premium efficiency
- Hazardous location rated up to Class I, Division 2, Groups A, B, C, and D



www.automationdirect.com/ac-motors

U.S. Motors ACCU-Torq Motors

These high-performance inverter duty 3-phase motors are an excellent cost-effective solution for applications requiring 100% torque down to zero speed. They offer premium efficiency, are optimized for operation with any VFD, and are specifically designed for precision speed control.

- Available in 230/460 VAC
- Horsepower sizes ranging from 1/4 hp up to 10 hp
- Speeds of 1800 rpm
- Feature a 5000:1 speed range
- Constant power (HP) operation to twice base speed
- NEMA Design A
- Class F insulation

MORE TEMPERATURE TRANSMITTERS, SENSORS, AND CONTROLLERS

SOLO Modular Temperature Controller

SOLO modular temperature controllers snap together to allow easy control additions as needed. Each controller can be configured with a different control mode and output type to fit different applications.

- Up to 8 independent control loops
- Each loop allows thermocouple, RTD, mA, mV, or voltage inputs, and voltage, current, voltage pulse, or relay outputs
- Includes a second relay ideal for alarms (12 modes), dual heating/cooling applications, and supports PID, ON/OFF, Ramp/Soak, or manual control modes
- SL-SOFT configuration/monitoring software (FREE download) connects via built-in Modbus RS-485 port

ProSense Programmable and Fixed Range Temperature Transmitters

ProSense XTD2 and XTH2 series DIN rail mounted programmable temperature transmitters are ideal for a wide range of industrial applications, offer several mounting options, and can be used with a variety of sensors and process inputs.

- Configurable 4-20 or 20-4 mA output using free ProSense configuration software and an XT-USB cable (sold separately)

ProSense XTH2 series fixed-range transmitters used for Type Pt100 3-wire RTDs feature pre-configured measuring ranges up to 500°F (260°C).



SOLO
Modules
priced at:
\$79

www.automationdirect.com/process-controllers

New Optris Infrared Pyrometer Options

Additional CSmicro and new CSLaser series infrared pyrometers have been added. These infrared pyrometers use non-contact sensing to determine an object's surface temperature.

- CSmicro series features a rugged stainless steel construction with temperature ranges up to 1,600°C (2,912°F)
- CSLaser models offer an innovative double laser aiming system for extremely accurate measurements
- CE marked and RoHS compliant

WIHA TOOLS AND OTHER TOOL ADDITIONS

Wiha Tools

Wiha tools are built with top-quality materials, ergonomically designed, and engineered with safety in mind to ensure long-lasting, reliable, and safe operation.

- Standard, insulated, and miniature/precision screwdrivers
- Multi-bit, hex, and impact bit drivers
- General purpose, insulated, cutting, crimping, cable shears, and precision pliers
- Also available in tool sets

More Cutting, Crimping, and Wire Stripping Tools

New AutomationDirect wire and cable tools include a pistol grip automatic cutting/stripping tool that provides stress-free operation and a versatile cable dismantling/stripping tool that allows circular, lengthwise, and spiral stripping of all cable sizes and insulation types.



starting at:
\$4.25

www.automationdirect.com/tools

In addition, several crimping tools have been released, including:

- Fixed crimping tool with indent profile
- Crimping tools with oval and trapezoid crimp profiles
- Crimper with color-coded connector reference
- Square profile rotatable self-adjusting crimper

MORE PROXIMITY SENSOR OPTIONS

starting at:

\$13

AchieVe Series Inductive Proximity Sensors

The new AchieVe series of stainless steel, flush and non-flush inductive proximity sensors with PNP or NPN logic, offer great value for general industrial applications.

Balluff BCS Series Capacitive Proximity Sensors

Balluff BCS series capacitive proximity sensors are DC powered and feature rugged stainless steel or thermoplastic housings with protection ratings up to IP67 for harsh industrial environments.



www.automationdirect.com/proximity

NEW POWER SUPPLY OPTIONS

starting at:

\$69

RHINO BASIC PSR Series Power Supplies

PSR series supplies with an ultra-slim design are ideal for charging applications, have rugged aluminum housings, adjustable output voltage, and are available in various voltage and Watt options.

RHINO TOUGH PSRP and PSRT Power Supplies

PSRP series supplies are space-saving with push-in connectors, a rugged aluminum housing, and many DC power options. PSRT series models are fully encapsulated, machine-mountable, with a compact footprint and rugged aluminum housing.



www.automationdirect.com/dc-power-supplies

MORE CIRCUIT & SURGE PROTECTION DEVICES

starting at:

\$35.50

Gladiator GECP Series Circuit Protectors

GECP series 12/24 VDC circuit protectors offer a fixed trip or adjustable trip current range and adjustable trip characteristics, are compact and lightweight, and feature a very low cost per channel.

DEHN Compact Data and Signal Surge Protectors

BLITZDUCTORconnect yellow/line compact data and signal surge protectors are Type 1 universal lightning current and surge arresters with a slim stackable slice-type design, high discharge capacity, low voltage protection, and are capable of protecting terminal equipment.



www.automationdirect.com/circuit-protection
www.automationdirect.com/SPD

MORE ETHERNET CABLES & NEW HAR WIRE

Cables starting at:

\$0.61/ft.

Quabbin Ethernet Cable Additions

New Quabbin Datamax Extreme Cat6/6a Ethernet cable in various gauge sizes and styles has been added to our cut-to-length cable offering. Included with this addition is a mil-spec colored cable ideal for military use and common commercial applications.

LUTZE HAR/MTW 300V to 750V Rated Wires

LUTZE 300V to 750V rated HAR/MTW wire meets National Electrical Code (NEC) and NFPA Standard 79 requirements for appliance wiring, control cabinets, and machine tool applications in Europe and North America.



www.automationdirect.com/bulk-wire-cable

SAFETY SWITCHES, CONTACTORS, & CONTROLS

IEC Safety Contactors starting at: **\$66**

SSP Magnetic Non-Contact Safety Switches

SSP series magnetic locking RFID non-contact safety switches monitor and lock machine guards, doors, windows, or other machinery without requiring contact.

WEG Electric IEC Safety Contactors and Motor Controls

WEG Electric CWBS series IEC safety contactors provide safe and reliable control of electrical power. Various series of motor controls for general purpose and washdown applications are offered in a variety of hp, voltage, and amp ratings.



www.automationdirect.com/safety
www.automationdirect.com/motor-controls

NEW ENCLOSURES & SUSPENSION ARMS

HMI Enclosures starting at: **\$476**

Saginaw HMI Enclosures & Suspension Arms

New carbon/stainless steel HMI enclosures in various sizes and NEMA ratings up to 4X for harsh industrial environments are now available, as are modular HMI enclosure suspension arm systems that allow operators to easily adjust the HMI enclosure's position.

Hammond Junction Boxes & More

Carbon/stainless steel junction boxes, wiring troughs, and polycarbonate and ABS miniature cases with screw covers are now offered in various NEMA ratings.



www.automationdirect.com/enclosures

MORE PNEUMATIC COMPONENTS

starting at: **\$21.50**

Metal Work Regtronic Pneumatic Transducers

The new Regtronic series transducers utilize two internal solenoid valves to convert electronic signals from a PLC/controller to a regulated precision linear pneumatic output pressure. The dual solenoid design reduces cost by eliminating continuous air consumption.

Metal Work Syntesi Air Prep Components

New Syntesi modular air prep components & accessories include manual shut-off, filter/regulator & lubricator assemblies; filter/regulator & lubricator assemblies; filter & lubricator assemblies; filter & coalescing filter assemblies; and much more.



www.automationdirect.com/pneumatic-transducers
www.automationdirect.com/pneumatic-parts

MORE PROCESS CONTROL DEVICES

starting at: **\$664**

Picomag Magnetic-Inductive Flow Meters

Endress+Hauser Picomag series magnetic-inductive flow meters measure and monitor flow, temperature, volume, and conductivity simultaneously. The selectable I/O points can be configured for analog current or voltage output; pulse or switch output; IO-Link connection; or status inputs.

Pulsed Radar Level Sensors

Endress+Hauser Micropilot FMR10 non-contact pulsed radar liquid level sensor emits electromagnetic pulses and determines level based on the time it takes the pulses to reflect back to the sensor.



www.automationdirect.com/magnetic-inductive-flow-meters
www.automationdirect.com/level-sensors

ADDITIONAL BAR CODE SCANNERS

starting at:

\$242

CR1500 series barcode scanners are compact hand-held devices. CR5000 series barcode scanners are table-top presentation mode scanners. CR2700 series barcode scanners are high-end cordless scanners that use Bluetooth® 5 communications.



www.automationdirect.com/barcode-scanners

STRIDE SE3 ETHERNET SWITCHES

starting at:

\$78

STRIDE SE3 unmanaged Ethernet switches are a low-cost networking solution for industrial applications. These switches offer fast (10/100 Base-T) & Gigabit (1000 Base-T) speeds, fiber optic connections (ST 100FX, SC 100FX, and SFP ports), and up to 16 ports total. Available in IP30 metal housing or plastic IP67-rated version.



www.automationdirect.com/ethernet-switches

PATLITE SIGNALING BEACONS

starting at:

\$32

Patlite NE series signaling beacons are offered as visual-only beacons or as combination devices with a buzzer or selectable tone alarm (8 different tones) and signal beacon. Beacons are available in clear, mono-color, or multi-color versions that allow signaling numerous different equipment statuses with one device.



www.automationdirect.com/beacon-lights

PROSENSE T30R SERIES TIMER RELAYS

starting at:

\$49

ProSense T30R series timer relays feature a high 30A SPDT output contact to control loads without requiring a separate contactor. These relays are available in on-delay, off-delay, fleeting, and cyclic mode timing options and offer easy adjustment with timing ranges up to 10 hours. They are encapsulated for resistance to harsh environments.



www.automationdirect.com/timer-relays

SURESERVO2 460 VAC SERVO SYSTEMS

starting at:

\$460

These servo motor sets of drives, cables, and accessories include an on-board motion controller with registration, electronic camming and event-based logic control, 24-bit encoders for precise feedback, Safe Torque Off (STO) for machine safety compliance, option modules for EtherNet/IP and Modbus TCP, and so much more.



www.automationdirect.com/sure-servo2

MORE WIRE DUCT & CONDUIT OPTIONS

Wire Duct starting at:

\$13/m

Iboco Wide & Narrow Finger Wire Ducts
New 1m length wide and narrow finger wall wire ducts and 2m narrow finger wall wire duct with self-adhesive.

Murrplastik Split Conduit
EWT-PA series flexible, non-metallic, two-piece split conduit provides easy routing of pre-terminated cables.



www.automationdirect.com/wire-duct
www.automationdirect.com/split-conduit

PBC LINEAR BEARINGS, SHAFTS, & SUPPORTS

starting at:

\$4.50

PBC linear shafts are precision ground to support high-precision linear motion applications where tight tolerances are needed. PBC bearings are used with steel linear shafts to provide precise, smooth action along the linear path. PBC linear shaft supports are used with any shaft material to allow easy shaft installation and support.



www.automationdirect.com/linear-motion

LS ELECTRIC XGB PLCs

CPUs starting at:

\$299

The XGB PLC family offers advanced controllers geared for motion applications; with high-level features such as IEC programming, they can also be beneficial in any automated system. The free to download XG5000 programming software is an advanced tool for configuring and programming the LS PLCs.



www.automationdirect.com/ls-electric-plc

Industrializing an Arduino: Making a Single-Board Controller Fit for the Factory

In two previous project articles, we set out to prove that single-board controllers, common to the maker community, can be adapted to industrial applications, or it might be as accurate to say industrial applications can be adapted to work with such controllers.

In the first project, an Arduino was able to control a flow loop using PID control, and for the second, a Raspberry Pi was able to perform model-based temperature control.

Some of the problematic characteristics of these devices have proved to be their physical fragility and the difficulty of making connections. These small controllers are, for the most part, naked boards (Figure right) with exposed contacts, and protecting them sufficiently to survive in an industrial environment is the responsibility of the user.

To solve this issue, there are now industrialized versions of these controllers, built into the kinds of housings and form-factors more typical of conventional PLCs and supporting modules. To read more, go to: <https://go2adc.com/arduino-ss>



When and Why to Upgrade HMIs

Consumers are accustomed to rapidly upgrading their personal electronic devices by buying new hardware and updating apps, but the industrial automation world usually works at a slower and more delayed pace in this regard. Greg Philbrook, HMI product manager at AutomationDirect, wrote an article for the December 2023 edition of InTech, titled HMIs Are Not iPhones: HMI Upgrade Considerations, covering some of the things that industrial users should look at when considering whether to specify an updated HMI for a new or retrofit application.

When is Newer Better?

To a great extent, modern industrial HMIs are quite mature products in terms of both hardware and software, but there remain several key aspects where users appreciate improvements:

- Ease-of-use
- Cybersecurity
- Future-proofing
- Convenient form factors
- Backward compatibility
- Practical new features
- Value

A typical consumer has a good amount of flexibility to choose the device size of their choice - usually going larger - when they select a phone or TV. But industrial users need consistent form-factors, even when transitioning from 4:3 display ratios to the new standard of 16:9, to preserve a degree of physical backward compatibility.

The newest CM5 generation of AutomationDirect C-more HMIs is designed with this in mind, and it is offered in 4-, 7-, 10-, 12-, 15-, and now also 22-inch sizes. These HMIs can run in landscape or portrait mode, and they continue to offer expected features, such as a NEMA 4/4X rating, 12/24VDC power inputs, serial ports, and SD card ports.

To read more of the article head over to: <https://go2adc.com/upgrade-ss>

For more information on the robust C-more CM5 HMI line go to:

<https://go2adc.com/cm5-home>



NEW VIDEOS

Find all videos at www.automationdirect.com/videos

C-MORE CMS - OUR BEST HMI YET



This video highlights the newest generation of our popular C-more HMI product line. (VID-CR-0039)

SUREFRAME T-SLOT ALUMINUM FRAME



This video showcases our SureFrame T-Slotted aluminum rails, which are readily available in high strength, industry standard size profiles, cut to your specified lengths. (VID-ST-0002)

USING IO-LINK WITH PRODUCTIVITY2000 PLCS



This video is a 3-part series showing how to use the IO-Link protocol to connect compatible field devices such as sensors and actuators to a controller like a PLC.

(VID-PA-0014)

WHAT'S UP WITH AUTOMATIONDIRECT

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Let AutomationDirect help you stretch your controls and maintenance budget!

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