

Freedom Technologies Work Cell Controller

The Freedom's new Work Cell Controller is an intelligent operator interface that offers rugged I/O, built-in Ethernet connectivity, and optional A/D and touchscreen capabilities. The compact device is an ideal data acquisition and display device for OEM products and stand-alone systems such as factory floor controls. The unit's 10Base-T Ethernet facilitates remote diagnostics, control, and communication, including sending and receiving E-mails and alerts.

Features:

- 1/4 VGA display (320 x 240 pixels)
- 8 A/D inputs
- 24-27 industrialized digital I/O
- 10Base-T Ethernet with RJ-45
- Meets NEMA 4 water resistance standards
- 4096 x 4096 analog touch screen (optional)



RabbitNet

RabbitNet expansion ports enable a modular and expandable embedded control system whose configuration of expansion cards can be tailored to a large variety of demanding real-time control, display, and data-acquisition applications. A typical RabbitNet system consists of a master single-board computer and one or more peripheral cards. A high-performance Rabbit 3000 ® or Rabbit 2000 ® microprocessor on the master provides fast data processing, and the master SBC also provides the DCIN and +5 V power for the peripheral cards.

The Work Cell Controller incorporates 24-27 digital I/O plus an I/O expansion port, 4 serial ports, the Rabbit 2000 microprocessor at 22.1 MHz, and 256K of Flash / 128K of SRAM (512K Flash/512K SRAM available). When front-panel mounted, the unit meets NEMA 4 water-resistance standards, making it suitable for use in harsh environments.

The Work Cell Controller's digital I/O include up to 19 protected inputs and 8 high-current sourcing or sinking outputs. It features 8 analog input channels configurable as 11-bit single-ended or four 12-bit differential.

The Work Cell Controller comes equipped with a 1/4 VGA display (320 x 240 pixels) with a 9-key keypad and programmable on/off white LED backlight and includes a 4096 x 4096 analog touchscreen. Freedom's Work Cell Controller provides easy-to-use menu-building software and have a programmable audible alarm for prompt notification and keypad/display feedback.

The RS-232 ports can be configured as a single 5-wire port or as two 3-wire ports, while the 8 high-current outputs can be individually configured as sourcing, sinking, or tri-state via software. The analog inputs have 8 software-selectable gain voltage ranges from 0-1 V to 0-20 V. The Work Cell Controller supports English and foreign language fonts, as well as graphic and bitmap images, and its C programmability offers design engineers unlimited flexibility. A font converter program is supplied, and different fonts, languages, and sizes can be used simultaneously in combination with graphic images.



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- 8 A/D inputs
- 24-27 industrialized digital I/O
- 10Base-T Ethernet with RJ-45
- Meets NEMA 4 water resistance standards
- 4096 x 4096 analog touch screen (optional)

Ethernet Port	10Base-T
Flash	256K (Standard)
RAM	128K
Backup Battery	Socketed 3 V lithium coin-type, 265 mA·h, supports RTC and RAM, connection for user-supplied external battery
Keyboard/Display	1/4 VGA (320 x 240 pixels) with programmable on/off white LED backlight, 9-key tactactile feedback keypad
LEDs	4: Power On, Microprocessor Error, Ethernet Link ALive, Ethernet Activity
Digital Inputs	19 protected to +/- 36 V DC
Digital Outputs	8: individually configurable in software; sink up to 350 mA, source up to 250 mA, or tri-max. 40 V DC max.
Analog Inputs	Eight 11-bit single ended or four 12-bit differential; 200 k Ω input impedance, 2.5k samples/sec. Eight software-controlled programmable gain/voltage ranges from 0-1 V to 0-20 V.
Serial Ports	4 CMOS-Compatible 1 RD-485 (or I/O expansion port) 2 RS-232 (one 5-wire or two 3-wire) One 5 V CMOS-compatible (programming)
Serial Rate	Max. burst rate = CLK/32, Mac. Sustained rate = CLK/64
Real-Time Check	Yes
Timers	Five 8-bit timers (4cascadable from the first) and one 10-bit timer with 2 match registers
Watchdog/Supervisor	Yes
Power	9-40 V DC or 24 V AC, 4 W max.
Operating Temp.	-10° to +65°C
Humidity	20-17% non-condensing
I/O Connectors	Screw terminals support max. 14 AWG/1.5 mm ² (standard)
Product Size	5.67" x 4.41" x 1.70" (144 x 112 x 43 mm)