## spectra

## UniStream

## Building Blocks

Completely modular in architecture, UniStream ${ }^{\text {TM }}$ enables you to create a compact control device that matches your application requirements. Select any UniStream ${ }^{\text {TM }}$ HMI panel, add a CPU, and add the right I/O and COM modules to fit your requirements. The result is an all-in-one controller that comprises the optimal configuration for your specific application.


## All-in-One, simple configuration-saves on cabinet space and wiring costs

Use a Local Expansion Adapter to connect UniStream ${ }^{\text {TM }}$ to additional I/O modules on a DIN rail.

## Interfaces




|  | CPU + 7" HMI Panel | CPU + 10.4" HMI Panel | CPU + 15.6" HMI Panel |
| :---: | :---: | :---: | :---: |
| Part Number | USC-P-B10 and USP-070-B10 | USC-P-B10 and USP-104-B10 | USC-P-B10 and USP-156-B10 |
| Number of I/Os per CPU (On-board, local and remote) | Up to 2,048 |  |  |
| On-board Uni-I/OTM or Uni-COM ${ }^{\text {TM }}$ Modules (All-in-One configuration) | Snap up to 3 slim modules (1) | Snap up to 5 slim modules (1) |  |
| Local Uni-I/O ${ }^{\text {TM }}$ Modules | The UniStream ${ }^{\text {TM }}$ CPU supports a maximum of 16 slim Uni-I/OTM (1) (including the on-board modules) |  |  |
| Remote I/O Expansion | Use EX-RC1 adapters to further extend the number of I/Os |  |  |
| Bit Operation | $0.13 \mu \mathrm{~s}$ |  |  |
| Ladder Memory | 1 MB |  |  |
| External Memory | microSD and USB Flash drive |  |  |
| Video | Show MPEG-4 videos on the HMI screen |  |  |
| Audio | Play MP3 audio files via internal speaker, or external speakers via audio-out jack |  |  |
| Power Supply | 12/24VDC |  |  |
| Backup Battery | CR2032, <br> Back-up RTC values, system data and retained tags |  |  |
| Communication |  |  |  |
| Ports | 2 Ethernet • 1 RS485•1 CANbus <br> 2 USB host ports • 1 USB device port for programming |  |  |
| Protocols | MODBUS, CANopen, BACnet (2) Message Composer for $3^{\text {rd }}$ party protocols |  |  |
| HMI Panel |  |  |  |
| Type | TFT, LCD, Touch HMI Panel |  |  |
| Size | 7" (16:9) | 10.4" (4:3) | 15.6" (16 : 9) |
| Resolution | 800x480 (WVGA) | $800 \times 600$ (SVGA) | 1366x768 |
| Colors | 65,536 (16bit) |  | 16M (24bit) |
| Display Backlight Illumination | White LED |  |  |
| Environment |  |  |  |
| Protection | IP66, IP65 and NEMA4X when panel-mounted (3) |  |  |
| Operating Temperature | $-20^{\circ} \mathrm{C}$ to $55^{\circ} \mathrm{C}\left(-4^{\circ} \mathrm{F}\right.$ to $\left.131^{\circ} \mathrm{F}\right)$ |  | $0^{\circ} \mathrm{C}$ to $50^{\circ} \mathrm{C}\left(32^{\circ} \mathrm{F}\right.$ to $\left.122^{\circ} \mathrm{F}\right)$ |

${ }^{(1)} 1$ wide I/O modules width $=1.5$ slim I/O modules width - see table " Digital Uni-I/O™ Modules"
${ }^{(2)}$ Using a gateway model: GW-BAC1
${ }^{(3)}$ UniStream ${ }^{\text {TM }}$ complies with IP66 and NEMA4X only with the audio seal installed, please refer to the installation guide of the HMI panel for information.

## Technical Specifications

## UniStream ${ }^{\text {TM }}$ HMI Panel

Art No. 147263 USP-070-B08
Art No. 131083 USP-104-B10
Art No. 141762 USP-156-B10

Art No. 131129
USP-070-B10
USP-104-M10

UniStream ${ }^{\text {TM }}$ HMI Panels provide the foundation of an all-in-one PLC + HMI controller. To create an all-in-one device, snap a UniStream ${ }^{\text {TM }}$ CPU-for-Panel and one or more Uni-I/O ${ }^{T M}$ or Uni-COM ${ }^{\top M}$ modules onto the back of the panel.
Installation Guides are available in the Unitronics Technical Library at www.unitronicsplc.com.

\left.| Power Supply | USP-070-B08 |  | USP-070-B10 | USP-104-B10 |
| :--- | :--- | :--- | :--- | :--- | USP-104-M10 $\right)$ USP-156-B10


| Display | USP-070-B08 | USP-070-B10 | USP-104-B10 | USP-104-M10 | USP-156-B10 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| LCD type | TFT |  |  |  |  |
| Backlight type | White LED |  |  |  |  |
| Luminous intensity (brightness) | Typically 400 nits ( $\mathrm{cd} / \mathrm{m} 2$ ), at $25^{\circ} \mathrm{C}$ |  |  |  |  |
| Backlight longevity ${ }^{(1)}$ | 30k hours | 50k hours |  |  |  |
| Resolution (pixels) | $800 \times 480$ <br> (WVGA) | $800 \times 480$ <br> (WVGA) | $\begin{aligned} & 800 \times 600 \\ & (\text { SVGA) } \end{aligned}$ |  | $1366 \times 768$ |
| Size | 7" | $7{ }^{\prime \prime}$ | 10.4" |  | 15.6" |
| Viewing area <br> Height $x$ Width (mm) | $154.08 \times 85.92$ | $152.4 \times 91.44$ | $211.2 \times 158.4$ |  | $344.23 \times 193.53$ |
| Color support | 65,536 (16bit) |  |  |  | 16M (24bit) |
| Surface treatment | Anti-glare |  |  |  |  |
| Touch screen | Resistive Analog |  |  | Capacitive multi-touch, 5-fingers | Resistive Analog |
| Actuation force (min) | $>80 \mathrm{~g}(0.176 \mathrm{lb})$ |  |  |  |  |


| System |  |
| :---: | :---: |
| Processor | 32 bit, 800MHz RISC Processor, with Graphic Accelerator |
| Internal memory | RAM: 512 MB <br> ROM: 3GB system memory 1GB user memory |
| External memory | microSD or microSDHC card <br> Size: up to 32GB <br> Data Speed: up to 200Mbps |
| Audio ${ }^{(2)}$ |  |
| Bit Rate | 192kbps |
| Internal speaker | Audio compatibility: mono MP3 files. Frequency range: 500 Hz to 20 KHz |
| External audio | Audio compatibility: stereo MP3 files. <br> Interface: 3.5 mm Audio-out jack - use shielded audio cable of up to 3 m ( 9.84 ft ). <br> Impedance: $32 \Omega$ <br> No isolation |

## Video

| Support Formats | MPEG-4 Visual, AVC/H. 264 |
| :--- | :--- |

## Communication

| Ethernet port |  |
| :--- | :--- |
| Number of ports | 2 |
| Port type | $10 / 100$ Base-T (RJ45) |
| Auto crossover | Yes |
| Auto negotiation | Yes |
| Isolation voltage | 500 VAC for 1 minute |
| Cable | Shielded CAT5e cable, up to 100 m (328 ft) |
| USB device ${ }^{(3)}$ |  |
| Number of ports | 1 |
| Port type | Mini-B |
| Data rate | USB 2.0 (480Mbps) |
| Isolation | None |
| Cable | USB 2.0 compliant; $<3 \mathrm{~m}(9.84 \mathrm{ft})$ |


| USB host |  |
| :--- | :--- |
| Number of ports | 2 |
| Port type | Type A |
| Data rate | USB 2.0 (480Mbps) |
| Isolation | None |
| Cable | USB 2.0 compliant; $<3 \mathrm{~m}(9.84 \mathrm{ft})$ |
| Over current <br> protection | Yes |


| On-board I/O or COM modules ${ }^{(4)}$ | USP-070-B08, USP-070-B10 | USP-104-B10, USP-104-M10 USP-156-B10 |
| :---: | :---: | :---: |
| Number of modules | Up to 3 | Up to 5 <br> (up to 4 of them can be COM modules) |

Note that the numbers above relate to Uni-I/O and Uni-COM modules. You can mix Uni-I/O and Uni-COM modules with Uni-I/O Wide modules, considering that 1 Uni-I/O Wide module equals $11 / 2$ Uni-I/O module. For example, the USP-104-B10 and USP-104-M10 back panel can host 2 Uni-I/O and 2 Uni-I/O Wide modules in any order.

| Environmental |  |  |
| :---: | :---: | :---: |
| Protection | Front face ${ }^{(2)}$ : IP65/66, NEMA 4X Rear side: IP20, NEMA1 |  |
|  | USP-070-B08, USP-070-B10, USP-104-B10, USP-104-M10 | USP-156-B10 |
| Operating temperature | $-20^{\circ} \mathrm{C}$ to $55^{\circ} \mathrm{C}\left(-4^{\circ} \mathrm{F}\right.$ to $\left.131{ }^{\circ} \mathrm{F}\right)$ | $0^{\circ} \mathrm{C}$ to $50^{\circ} \mathrm{C}\left(32^{\circ} \mathrm{F}\right.$ to $\left.122^{\circ} \mathrm{F}\right)$ |
| Storage temperature | $-30^{\circ} \mathrm{C}$ to $70^{\circ} \mathrm{C}\left(-22^{\circ} \mathrm{F}\right.$ to $\left.158^{\circ} \mathrm{F}\right)$ | $-20^{\circ} \mathrm{C}$ to $60^{\circ} \mathrm{C}\left(-4^{\circ} \mathrm{F}\right.$ to $\left.140^{\circ} \mathrm{F}\right)$ |
| Relative Humidity (RH) | $5 \%$ to 95\% (non-condensing) |  |
| Operating Altitude | 2,000 m (6,562 ft) |  |
| Shock | IEC 60068-2-27, 15G, 11ms duration |  |
| Vibration | IEC $60068-2-6,5 \mathrm{~Hz}$ to $8.4 \mathrm{~Hz}, 3.5 \mathrm{~mm}$ constant amplitude, 8.4 Hz to 150 Hz , 1G acceleration |  |


| Dimensions | USP-070-B08 | USP-070-B10 | USP- $\mathbf{- 0 4}-\mathbf{B 1 0}$ | USP- $\mathbf{1 0 4}-\mathbf{M 1 0}$ | USP-156-B10 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Weight | $0.7 \mathrm{Kg}(1.54 \mathrm{lb})$ | $0.7 \mathrm{Kg}(1.54 \mathrm{lb})$ | $1.45 \mathrm{Kg}(3.20 \mathrm{lb})$ | $1.45 \mathrm{Kg}(3.20 \mathrm{lb})$ | $3 \mathrm{Kg}(3.60 \mathrm{lb})$ |
| Size | Refer to the images below |  |  |  |  |

USP-070-B08 , USP-070-B10 7" Panel


USP-104-B10, USP-104-M10 10.4" Panel


## USP-156-B10 15.6" Panel



## Notes:

1. Panel's longevity is the typical operating time after which the brightness drops to $50 \%$ of its original level.
2. The audio outlet seal must be inserted in the outlet in order to comply with IP66 or NEMA 4X.
3. The USB device port is used to connect the device to a PC.
4. The panel back is molded into a DIN rail-like structure which provides the physical support for a UniStream ${ }^{T M}$ CPU-for-Panel, Uni-I/O ${ }^{T M}$ modules and Uni-Com ${ }^{\text {TM }}$ modules. Details are provided in the UniStream ${ }^{\text {TM }}$ HMI Panel installation guides.
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