

# UC32.12

The UC32.12 is a programmable controller, with 8 Universal Inputs and 4 UniPut™ + Relay channels. Cylon's UnitronUC32.12 is ideally suitable for main plant control, including AHUs, Boilers, Rooftop units, Lighting etc.



- **4 UniPuts™ + Relays**

hardware connections that can be used as inputs, outputs, or relays (software selectable)

- **8 Universal Inputs**

hardware connections that can be used as analog or digital inputs (software selectable)

- **Up to 32 controllers per fieldbus**

- **Flash upgradable firmware**

- **Time-stamped datalogs**

for increased flexibility and longer monitoring times

- **1024 strategy block**

- **32 datalogs with up to 1024 entries per datalog**

- **Powerful Diagnostics**

with rapid error-free commissioning technologies

The UC32.12 controllers are part of the UnitronUC32 range of products, which offers the following benefits:

### Unique Flexibility with UniPuts™

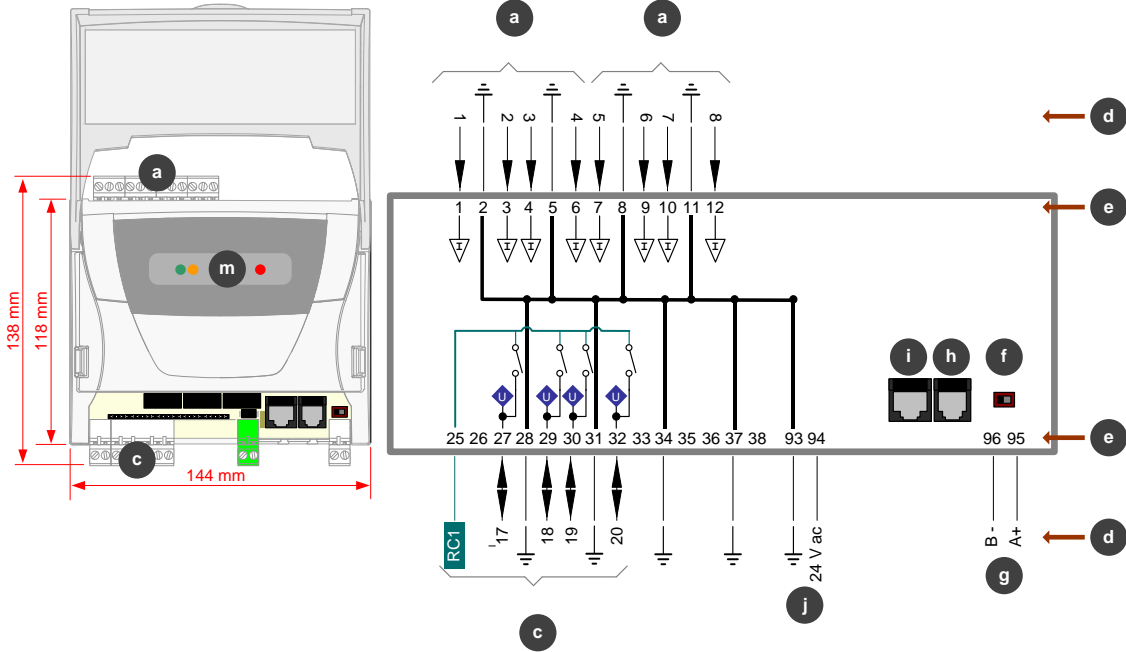
The UnitronUC32 range uniquely presents UniPuts™ - a revolutionary answer to flexible point configuration, offering maximised utilisation of controller capacity along with flexibility in strategy changes. Built on a modern web-based architecture, the UnitronUC32 range has a wide application scope with the flexibility of being stand-alone or network enabled.

### Cost Effective, low entry point for building control

The UnitronUC32 range offers reduced costs in terms of training, implementation, rollout and maintenance. Modular, extendible packages along with low installation costs mean a low entry point for building control. The future-proof UnitronUC32 range provides forward & backward compatibility, meaning an effortless upgrade path for existing Unitron Systems.

### Highly programmable and extendable through web-enabled HVAC technology

The UnitronUC32 range offers an advanced web-based 32-bit architecture, with advanced programmability through the Cylon Engineering Centre. Inbuilt diagnostics, along with expanded data logging and strategy storage, is further enhanced by Uniputs™, offering up to 8 Universal inputs, up to 8 Uniputs™ (AI/DI/AO/DO) and up to 8 Uniputs™ with relays.



	<b>CAUTION</b> - DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
	Universal Input
	Uninput™ + Relay <ul style="list-style-type: none"> <li>When these outputs are configured as 'relay' they use terminal 25 <b>RC1</b> as their common point. Otherwise they use 28, 31, 34, or 37 (<math>\frac{\ominus}{\oplus}</math>) as their common point.</li> </ul>
<b>RC1</b>	Relay Common
	Common
<b>d</b>	Point Numbers
<b>e</b>	Terminal Numbers
<b>f</b>	Fieldbus Terminator <ul style="list-style-type: none"> <li>OFF (fieldbus not terminated at this controller)</li> <li>ON (fieldbus terminated at this controller)</li> </ul>
<b>g</b>	Fieldbus Port
<b>h</b>	External Keypad Port
<b>i</b>	Service Port <p><b>Note:</b> Service Port (serial connection) must not be connected until after the device is powered on.</p>
<b>j</b>	Power 24 V AC

<b>m</b>	Indicator LEDs
	<b>Red LED</b> Continuous: Optional battery is healthy. Flash once a second: Indicates no battery/battery is low.
	<b>Green LED</b> Continuous: Strategy servicing and no comms. Flash rapidly (every 100 ms): Strategy not servicing. Flash once a second: MSTP comms, and Strategy servicing. <b>Note:</b> when Service Port is in use, the Green LED blinks off as Service Port comms are received.
	<b>Orange LED</b> Off: Normal operation. On: Priority Array set above 16, for one or more Hardware Points, by external BACnet Client or by the CEC.
	<b>Cycle left to right</b> (green - orange - red): Controller is in terminal mode.
	<b>Cycle right to left</b> (red - orange - green): Upgrade in progress while Controller is in terminal mode <b>Note:</b> The strategy is not serviced while in upgrade mode.
	<b>Cycle green to orange</b> Globals communication/setup problem
	<b>Green and orange flash simultaneously</b> Globals communication/setup problem <b>and</b> Priority Array is set above 16 by external BACnet Client, or by the CEC.

## Specifications:

### MECHANICAL

Size (excluding terminal plugs)	144 x 118 x 65 mm (5.7 x 4.7 x 2.6")
Enclosure	Injection moulded ABS
Mounting	DIN rail

### ENVIRONMENT

**Note:** *This equipment is intended for field installation within another enclosure.*

Ambient Temperature	0° - 50°C (32° - 122°F) ambient.
Ambient Humidity	0% - 90% RH non-condensing
EMC Immunity	EN 50082-1
EMC Emission	EN55011 Class B

### WIRING

**Note:** *Use Copper or Copper Clad Aluminium conductors only.*

Termination	PCB mounted plug terminal connections.
Conductor Area	Max: AWG 12 (3.09 mm <sup>2</sup> ) Min: AWG 22 (0.355 mm <sup>2</sup> )

### ELECTRICAL

Supply Requirements	24 V AC +/- 20% 50/60 Hz
Transformer Rating	with UCKRA420: 20 VA without UCKRA420: 15 VA
Power Rating	10 Watts maximum
Fuse Rating	1 A resettable

### PROCESSOR

Type	Hitachi (Renasas) SuperH SH17034 32-bit RISC
Clock Speed	20 MHz
Operating System Memory	512K flash
User Programmable Memory	512K RAM Battery backed for 2 years minimum plus 256K flash
Real-Time Clock	Battery backed for 2 years minimum

### INPUTS/OUTPUTS

**Note:** *Screened cable is recommended for all input connections.*

8 Universal Inputs (Points 1 - 8)	(Software selectable Interfaces) Active Input 0 – 10 V @ 182 K $\Omega$ . 10 bit / 14 bit resolution. Passive Input for a large range of temperature sensors, 10K3A1 sensors are recommended. 14 bit resolution. Active Current Input 0 – 20 mA @ 390 Ohms. 10 bit / 14 bit resolution. Digital Volt-Free contact @ 1 mA continuous. Pulse Counting up to 20 Hz, minimum pulse width 25 mS. Potentiometer input (0 K $\Omega$ - 10 K $\Omega$ , 1 K $\Omega$ - 11 K $\Omega$ etc).
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*The following UniPut™ features are available with .s32 format strategies created with the Cylon Engineering Centre:*

4 UniPuts™+Relays (Points 17 - 20)	(Software selectable interfaces) Active Input 0 – 10 V @ 40 K $\Omega$ . 9 bit resolution. Active Output 0 – 10 V @ 20 mA max load. Digital Volt-Free contact @ 25 mA not continuous. 24 Vac Detect NO 24 Vac Relay contacts, 2 A continuous/ 15 A inrush
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### COMMUNICATIONS

RS232 service port	@ 1K2, 2K4, 9K6, 19K2 or 38K4 Baud (defaults to 9K6) [cable: CC20/CAB]
Fieldbus RS485 port	@ 1K2, 2K4, 9K6, 19K2, 38K4 or 76K8 Baud (defaults to 38K4)
Keypad port	@ 9K6 Baud, RJ11 socket
Modem	Modem connection supported through RS232 service port [cable: CC31/CAB]

**INTERFACE**

Software	Unitron Command Centre Cylon Engineering Centre WebLink
Remote Keypad	UCKRA420 Serial Text Keypad connected via RJ11 port Maximum cable length 50m

**SOFTWARE FEATURES**

Configuration Mode (Accessible via Internal or External Keypad/Display device.)	
Time Stamped Datalogs	
Firmware upgrading via Service port	
Maximum Number of Analog Points	1024
Maximum Number of Digital Points	1024
Maximum number of strategy blocks	1024
Maximum number of Datalog Modules	32 (v 6.1.6 or later)
Maximum Controller Address	32
Maximum Datalog capacity	1024 entries per Datalog (v 6.1.6 or later)