

# CBM Range: CBM08 | CBM12 | CBM 16 | CBM24

The CBM (Cylon BACnet Main Plant) range of controllers are ideally suitable for main plant control, including AHUs, Boilers, Rooftop units, Lighting etc.

The CBM range of products offers the following benefits:



## Unique Flexibility with UniPuts™

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

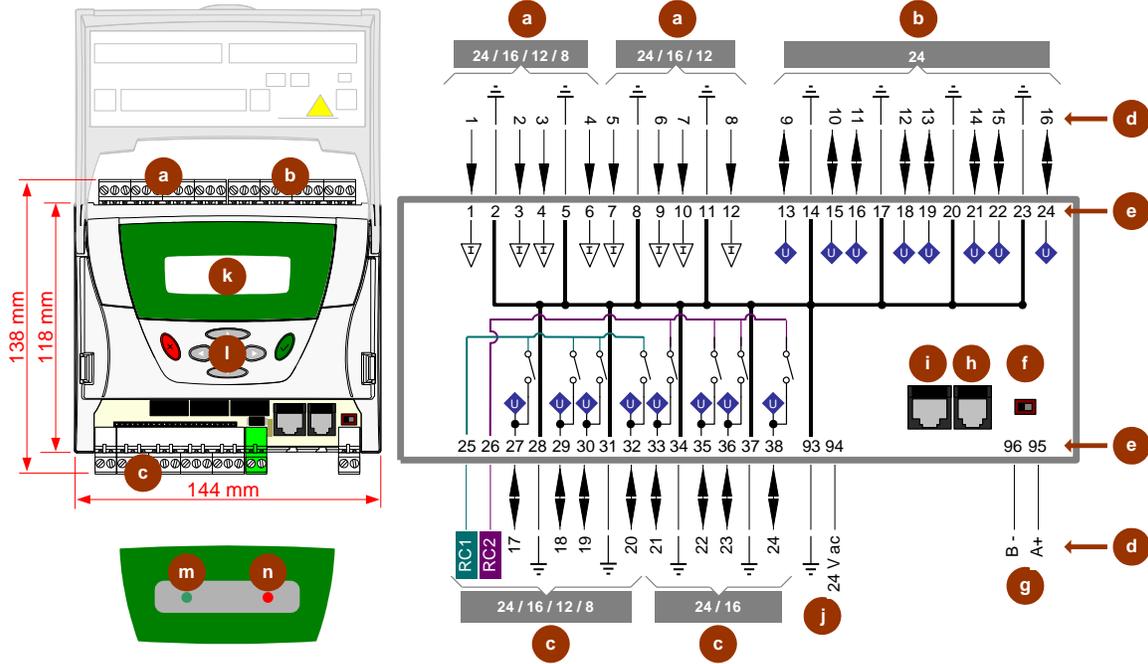
## Cost Effective, low entry point for building control

The CBM 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.

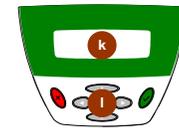
## Highly programmable and extendable through web-enabled HVAC technology

With inbuilt UnitronUC32 technology the CBM range offers an advanced web-based 32-bit architecture, with advanced programmability. 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.

	CBM08	CBM12	CBM16	CBM24/24LC	CBM24K
• UniPuts™				8	8
• UniPuts™ + Relays					
hardware connections that can be used as inputs, outputs or relays (software selectable)	4	4	8	8	8
• Universal Inputs					
hardware connections that can be used as analog or digital inputs (software selectable)	4	8	8	8	8
• Controllers per fieldbus – up to	32	32	16	16	16
• Flash upgradable firmware					
• Time stamped datalogs for increased flexibility and longer monitoring times					
• 1024 strategy blocks (400 strategy blocks for CBM24LC)					
• 32 datalogs with up to 1024 entries per datalog					
• Powerful Diagnostics with rapid error-free commissioning technologies					

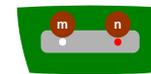


	<b>a</b>	Universal Input
	<b>b</b>	UniPut™
	<b>c</b>	UniPut™ + Relay <ul style="list-style-type: none"> <li>When these outputs are configured as 'relay' they use either terminal 25 <b>RC1</b> or terminal 26 <b>RC2</b> as their common point. Otherwise they use 28, 31, 34, or 37 (<math>\pm</math>) as their common point.</li> </ul>
	<b>RC1</b>	Relay Common
	<b>RC2</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
	<b>j</b>	Power 24 Vac



**Keypad Variants**

<b>k</b>	Text Display (LCD)
<b>l</b>	Internal Keypad <ul style="list-style-type: none"> <li>Pressing  and  together toggles the display between Configuration and Program modes.</li> <li>Pressing  and  together changes the contrast of the LCD screen display.</li> </ul>



**Non-Keypad Variants**

<b>m</b>	Status LED (green/orange) <ul style="list-style-type: none"> <li>When GREEN, this LED indicates the CPU status.</li> <li>When ORANGE, this LED indicates that Manual Override is active.</li> </ul>
<b>n</b>	Power LED <ul style="list-style-type: none"> <li>Red = on</li> </ul>

## Specifications:

### MECHANICAL

Size (excluding terminal plugs)	144 x 118 x 65 mm (5.7 x 4.7 x 2.6")
Enclosure	Injection molded 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 Aluminum 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: 25 VA without UCKRA420: 20 VA
Power Rating	10 Watts maximum
Fuse Rating	1 A resettable

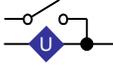
### PROCESSOR

Type	Hitachi (Renasas) SuperH SH17034 32-bit RISC
Clock Speed	20 MHz
Operating System Memory	512K flash
User Programmable Memory	1024K RAM Battery backed for 2 years minimum plus 512K flash
Real-Time Clock	Battery backed for 2 years minimum

### INPUTS/OUTPUTS

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

	CBM24 CBM24K	CBM16	CBM12	CBM08	
Universal Inputs 	8 (Pts 1-8)	8 (Pts 1-8)	8 (Pts 1-8)	4 (Pts 1-4)	(Software selectable Interfaces) Active Input 0 – 10 V @ 182 KΩ. 10 bit resolution. Passive Input for a large range of temperature sensors, 10K3A1 sensors are recommended. 10 bit resolution. Active Current Input 0 – 20 mA @ 390 Ohms. 10 bit resolution. Digital Volt-Free contact @ 1 mA continuous. Pulse Counting up to 20 Hz, minimum pulse width 25 mS. Potentiometer input (0 KΩ - 10 KΩ, 1 KΩ - 11 KΩ etc.).

	8 (Pts 9-16)	0	0	0	(Software selectable interfaces) Active Input 0 – 10 V @ 40 KΩ. 9 bit resolution. Active Output 0 – 10 V @ 20 mA max load. Digital Volt-Free contact @ 25 mA not continuous. 24 V <sub>ac</sub> Detect
	8 (Pts 17-24)	8 (Pts 17-24)	4 (Pts 17-20)	4 (Pts 17-20)	(Software selectable interfaces) Active Input 0 – 10 V @ 40 KΩ. 9 bit resolution. Active Output 0 – 10 V @ 20 mA max load. Digital Volt-Free contact @ 25 mA not continuous. 24 V <sub>ac</sub> Detect NO 24 V <sub>ac</sub> Relay contacts, 2 A continuous/ 15 A inrush

## COMMUNICATIONS

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

## INTERFACE

Software	CCB UEC (BACnet edition) BACnet Operator Workstation
Optional Internal Keypad (CBM24K)	LCD 4 x 20 characters 6 Buttons. Compatible with UCKRA420
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.)	
Firmware upgrading via Service port	
Maximum Number of Analog Points	1024
Maximum Number of Digital Points	1024
Maximum number of strategy blocks	1024
Maximum Controllers per Fieldbus	99*
<p><i>* It is recommended for typical conditions that the no. of Main Plant controllers on a main plant fieldbus be limited to 16. MSTP devices with a fractional (¼ or smaller) unit load will be required in order to extend a single fieldbus trunk beyond 32 devices. Both CBM and CBT controllers are ¼ unit load devices. Please refer to MAN0106 for recommendations on configuring a specific network for optimal comms speed.</i></p>	
Maximum Time schedules	10
Maximum Time schedules weekly events	24
Maximum Time schedules exceptions	5
Maximum Time schedules exception events	10