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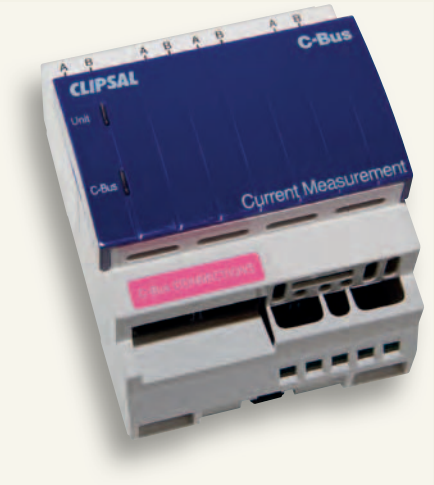
by Schneider Electric



Measure, monitor and control

C-Bus Current Measurement Unit

- Voltage and phase independent
- 0-40 and 0-80A range (software selectable)
- No mains connection required
- Accommodates split core Current Transformers (CTs)
- Four channels per unit
- Trigger events based on thresholds

C-Bus®

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Optimise energy use in a C-Bus installation

The C-Bus Current Measurement Unit (CMU) provides the ability to attach split core Current Transformers (CTs) that measure the current in electrical circuits. By specifying the typical voltage of the installation, the CMU can calculate power with a reasonable degree of accuracy and broadcast this information onto the C-Bus network. The broadcast messages can be used by devices such as touch screens and Wiser Home Control to present the information in a way the user can easily understand. All of the display devices can accumulate the data for up to a two years. They can then present the historical information to the user for comparison with more recent readings. The readings are stored for each measured channel, which can also have a tariff applied to give the user an indication of the cost of their power consumption.

The touch screens and Wiser Home Control offer the ability to display readings in Wh, CO_2, or cost. The 6.4" C-Touch Colour touch screen will support up to 20 measurement channels, as well as the ability to graph the readings.

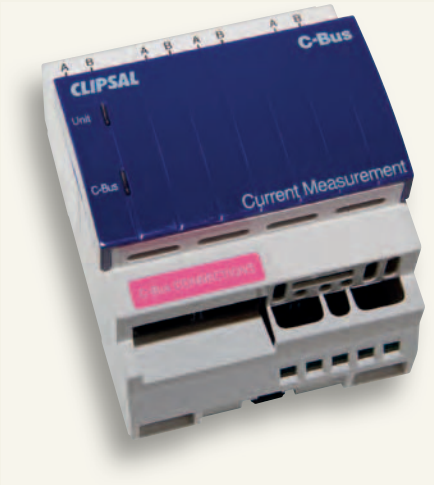
The CMU includes onboard threshold detection that can be configured to broadcast messages onto C-Bus, which will trigger events when thresholds are exceeded. This can be typically used to load shed non-essential devices should power consumption exceed desired levels. The threshold detection feature also includes hysteresis to ensure the power consumption falls below a preset level before permitting the controlled device to switch back on again.

Further hysteresis can be applied through time delay noise filtering or ensuring there are multiple readings before applying the threshold conditions. The threshold message can be optionally rebroadcast to the C-Bus network on power-up of the unit.

When the Current Transformer is configured to measure using the 40A scale, it can detect changes of as little as 10W. The Toolkit configuration software allows the installer to specify the amount of change to detect before broadcasting a message. This reduces the number of messages sent out onto the C-Bus network. Regardless of the threshold set, the CMU can also be configured to broadcast measurements at particular time intervals. The timed broadcast can also be disabled through a C-Bus group address, should regular transmissions not be desired. A further option may be configured that will allow the CMU to be polled from a C-Bus trigger group, should an immediate level be needed.

The split-core Current Transformers can be installed without the need for the mains cable to be disconnected. The current transformer and its connection cable are rated at 3.75kV isolation to maintain the C-Bus isolation rating. Each CT has a 15mm diameter hole that will easily fit on an 80A rated cable. It is also possible to clamp the CT around multiple circuits to read the accumulated current in the circuits.

The Current Measurement Unit is powered from C-Bus (needs no additional power supply to operate) and is housed in a four module wide DIN-rail mount enclosure.



Installer Benefits

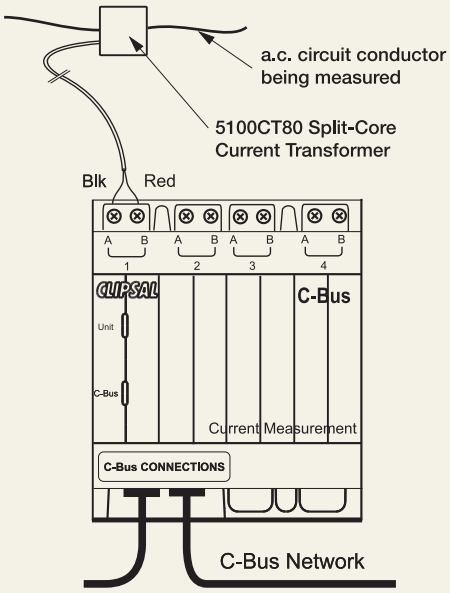
Designed and built with the installer in mind, the C-Bus Current Measurement Unit provides a flexible, easy to install solution. The Current Measurement unit includes the following features:

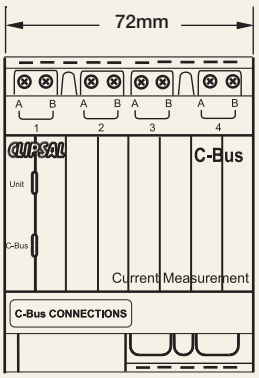
- DIN-rail mounting (4 module wide)
- Split core Current Transformers allow easy installation
- Single Current Transformer suitable for multiple ranges
- No mains connection required
- Four channels per unit
- Voltage and phase independent

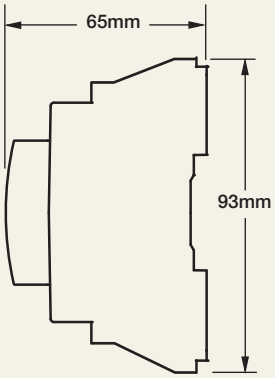
User Benefits

With features that were designed for ease of use, the user will benefit from the following:

- Trending of power consumption (when used with a touch screen or Wiser)
- Review of energy consumption information by hour, day, week or month
- Load shedding capabilities
- Maximising the energy efficiency of a C-Bus installation
- Identification of predicted use based on present consumption







C-Bus

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C-Bus® Current Measurement Unit

Parameter	Description
Description	C-Bus Current Measurement Unit (CMU)
Catalogue number	5504CMU
C-Bus supply voltage	15 to 36V d.c.
Current requirement	18mA powered from C-Bus. Does not provide power to the C-Bus network
Network clock and burden	No network clock or burden provided on this unit
a.c. impedance	90kΩ @ 1kHz
Electrical isolation	3.75kV from C-Bus to mains
Maximum number of CTs per unit	4 x 5100CT80. No other CT type may be connected for safety reasons
Current measurement range	0-40A a.c. or 0-80A a.c. 50/60Hz, software selectable
Connectors	C-Bus: 2 x RJ45 UTP Cat 5e CTs: screw type
Indicators	C-Bus and unit indicators
Accuracy	2.5% across full scale on both 40A and 80A ranges
Warm-up time	10 seconds
Mounting	DIN rail (4 modules wide)
IP rating	IP20
Weight	127g
Operating temperature	0 to 50ºC (32 to 122ºF)
Operating humidity	0 to 95% RH, non-condensing
Line voltage and power factor	Not measured by the CMU. Defined by the installer during software configuration

C-Bus® Current Transformer (CT)

Parameter	Description
Description	Current Transformer (CT), 80A
Catalogue number	5100CT80
Measurement range	0-40A or 0-80A, a.c. 50/60hz
Accuracy	2.5% over full range
CTs per CMU	Up to 4 CTs, one per input channel
Calibration	Calibrated in factory, no field calibration required.
Weight	78g
Operating temperature	0 to 50ºC (32 to 122ºF)
Construction	High impact plastic case with hinge and clip
Aperture	15mm nominal diameter
Wire lead length	102cm
Dimensions	30mm(W) x 43mm(H) x 28mm(D)
Isolation	3.75kV a.c. for 1 minute

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