

VIP-MC IP MASTER CLOCK

INTRODUCTION

The Valcom VIP-MC IP Master Clock is designed to provide clock synchronization signals to Valcom and many other manufacturers' clocks. Signaling for IP network devices include Network Time Protocol (NTP) and Daytime protocol. Analog (wired) correction signals include 2-wire Digital Correction, 2-wire BCD Correction and many Relay-controlled corrections.

SPECIFICATIONS

Features

- Acquires time from any NTP server over the IP network or date and time can be manually set.
- Provides time to NTP clients and/or Daytime protocol clients
- Programmable via web browser, Valcom VIP-102B Programming Tool or front panel LCD display
- Very high precision internal Real Time Clock
- Provides 2-wire Digital correction, 2-wire BCD correction and over 16 Relay correction formats
- Four Form C relay outputs
- Two Contact Closure inputs
- Power over Ethernet (PoE) 802.3af compatible
- 2.5 mm barrel jack for optional DC power input

Supported Synchronization Outputs

- 59th Minute (Default)
- 58th Minute (types 1, 2, 3 or 4)
- Sync-Wired 12 hour (w/ or w/o Generator relay)
- Sync-Wired 24 hour (w/ or w/o Generator relay)
- Digital 12 Hour
- Digital 24 Hour
- National Time 12hr 27m
- National Time 12hr 25m 24s
- National Time & Rauland (type 1 or 2)
- Rauland Digital
- Cincinnati D6 Impulse 12hr
- Cincinnati D3 Impulse 59th
- Once-A-Day Pulse (custom Time and Duration)
- Custom Control



Dimensions/Weight

- 1.75" H x 16.5" W x 11.88" D (1 RU)
(4.45cm x 41.9cm x 30.18cm)
- Weight 3.70 lbs. (1.68 kg)

Nominal Specifications

Relay Current: 10 Amps @ 24Vdc or 250Vac

Nominal Power Requirements

Via rear panel barrel connector:

Voltage: 24Vdc
Current: 300mA

Via 802.3af PoE Ethernet Switch:

802.3af: Class 3

These products are intended for use with a UL Listed power source marked "Class 2" or "LPS" rated 24 Vdc, or 48 Vdc (PoE).

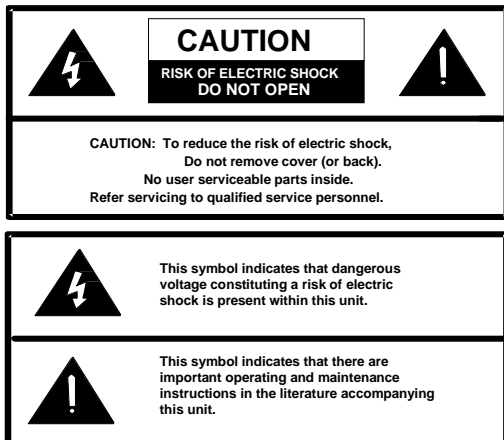
PoE and all interconnected ITE are intended for intra-building.

Environment


Temperature: 0 to +40° C
Humidity: 0 to 85% non-precipitating

Precautionary Designations

- **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- **AVERTISSEMENT:** Afin de réduire les risques d'incendie ou de décharge électrique, évitez d'exposer le système à la pluie ou à l'humidité.
- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
- L'appareil ne doit pas être exposé à des égouttements et éclaboussures et aucun Objet Rempli de liquide, comme vase, ne doit être placé sur l'appareil.



**IMPORTANT SAFETY INFORMATION
CONSIGNES DE SÉCURITÉ IMPORTANTES**

1. Read these instructions.
Lisez ces instructions.
2. Keep these instructions.
Conservez ces instructions.
3. Heed all warnings.
Respectez tous les avertissements.
4. Follow all instructions.
Suivez toutes les instructions.
5. Do not use this apparatus near water.
Ne pas utiliser cet appareil près de l'eau.
6. Clean only with dry cloth.
Nettoyer avec un chiffon sec.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
Ne pas bloquer les ouvertures de ventilation. Installer conformément aux instructions du fabricant.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
Ne pas installer à proximité de sources de chaleur telles que radiateurs, registres de chaleur, poêles ou autres appareils (y compris les amplificateurs) produisant de la chaleur.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade and the third prong are provided for your safety. If the provided plug does not fit into your outlet consult an electrician for replacement of the obsolete outlet.
Ne pas contourner le dispositif de sécurité de la fiche polarisée ou de mise à la terre. Une fiche polarisée possède deux lames dont une plus large que l'autre. Une fiche de terre a deux lames et une troisième broche de mise à la terre. La lame large et la troisième broche sont fournies pour votre sécurité. Si la fiche fournie ne rentre pas dans votre prise, veuillez consulter un électricien pour le remplacement de la prise obsolète.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
N'utilisez que des fixations / accessoires spécifiés par le fabricant.
12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
Utilisez uniquement avec le chariot, stand, trépied, support ou table spécifié par le fabricant ou vendu avec l'appareil. Quand un chariot est utilisé, Soyez prudent lorsque vous déplacez l'ensemble chariot / appareil pour éviter des blessures dues au renversement.
13. Unplug this apparatus during lightning storms or when unused for a long period of time.
Débranchez cet appareil pendant les orages ou lorsqu'il n'est pas utilisé pendant une longue période de temps.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way. Such as when the power supply cord or plug is damaged, liquid has been spilled, objects have fallen into the apparatus or the apparatus has been exposed to rain or moisture and does not operate normally or has been dropped.
Confiez toute réparation à un personnel qualifié. Une réparation est nécessaire lorsque l'appareil a été endommagé de quelque façon. Par exemple lorsque le cordon d'alimentation ou la fiche est endommagé, du liquide a été renversé, si des objets sont tombés dans l'appareil ou le appareil a été exposé à la pluie ou à l'humidité et ne fonctionne pas normalement ou s'il est tombé.

FCC Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference in which case the user will be required to correct the interference at his own expense.

INSTALLATION

Mounting

The VIP-MC is designed for rack mounting. Attach the provided mounting brackets to the sides of the VIP-MC using the included screws. Attach the VIP-MC to the rack posts as shown in Figure 2.

Network Connection

The VIP-MC has one RJ-45 network connector on the front panel. Use a standard Ethernet patch cable to connect the VIP-MC to an Ethernet switch.

Power and Signal Connections

Power and Signal connections are located behind a removable cover on the rear of the VIP-MC. Remove two screws to remove the cover, then reattach the cover after making required connections.

The preferred method of powering a VIP-MC is via a Power over Ethernet (PoE) switch meeting the 802.3af specification. For external power using the rear panel barrel connector, the preferred power supply is a Valcom VIP-324D.

If powering via 802.3af PoE, make sure all signal connections via the back panel are made then connect the VIP-MC to the Ethernet switch.

If external power is supplied via the barrel connector, make all signal connections on the rear panel and attach the unit to the network via the front panel RJ-45 Ethernet connector. Apply power by plugging the power supply into the VIP-MC via the jack on the rear of the VIP-MC.

The VIP-MC signal connectors are on the rear panel, as shown in Figure 1.

- 4 Form C relays
- 1 RS485 output
- 1 BCD output
- 2 Contact Closure switch inputs
- 1 24Vdc power input

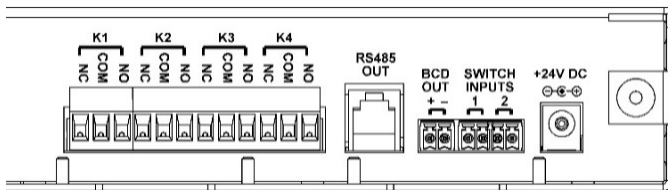


Figure 1

K1, K2, K3, K4 Relays: Four Form C relays are available for clock control, supervision or general usage depending on the programming options selected. The screw terminal blocks are removable for easier installation. The terminals are labeled for Common (C), Normally Closed (NC) and Normally Open (NO).

RS485 OUT: The RS485 output connection provides signaling for 2-wire Digital-Corrected Clocks in a format suitable for direct input to a Valcom V-CCU Clock Controller. The connector is a 6-pin RJ11 with the signal appearing on the center two pins (3 & 4). The output signal is the same as a Valcom V-DCPI.

BCD OUT: The BCD output connection provides signaling for 2-wire BCD Corrected Clocks, typically used with Simplex clocks.

SWITCH INPUTS 1 & 2: The two Switch Inputs are dry contact inputs which can be programmed to manually control one of the relay outputs or to set the system time. If provisioned for System Time, the VIP-MC will be set to a user-specified time when the contact is closed.

24V DC: Barrel connector input jack for external power.

SETUP

Programming

Information specific to your application must be programmed into the VIP-MC. Programming can be done using the front panel LCD control, using the built-in web interface or using the Valcom VIP-102B IP Solutions setup tool. For ease of access, the PC used for programming should be connected to the same subnet as the VIP-MC. Download the latest version of the free IP Solutions Setup Tool from the Valcom web site at www.valcom.com/vipsetuptool

The VIP-MC is programmed at the factory to acquire an IP address using Dynamic Host Configuration Protocol (DHCP). If the DHCP scope includes Option 42 (NTP Server) and either Option 100 or Option 101 for time zones, the VIP-MC will operate using those values. If DHCP is not available, the VIP-MC will revert to the static IP address of 192.168.6.207 after 3 minutes.

Factory Reset

The VIP-MC can be reset to Factory default programming using the front panel LCD control. Two levels of reset are available. Press and hold the OK button for 10 to 19 seconds to reset the Network settings. Holding the OK button pressed for more than 20 seconds will reset all programming (including passwords).

TECHNICAL ASSISTANCE

When trouble is reported, verify power is being supplied to the unit and there are no broken connections. If a spare unit is available, substitute a spare unit for the suspected defective unit.

Assistance in troubleshooting is available from the factory. Call (540) 563-2000 and press 1 for Technical Support or via email at support@valcom.com. When requesting assistance, you should include all available information. It is strongly suggested that you go to the web site and review the information at www.valcom.com.

Valcom equipment is not field repairable. Valcom, Inc. maintains service facilities in Roanoke, VA. Should repairs be necessary, attach a tag to the unit clearly stating your company name, address, phone number, contact person and the nature of the problem. Send the unit to:

Valcom, Inc.
Repair & Return Dept.
5614 Hollins Road
Roanoke, Va. 24019-5056

WARRANTY

Warranty information may be found on our website at www.valcom.com/warranty.

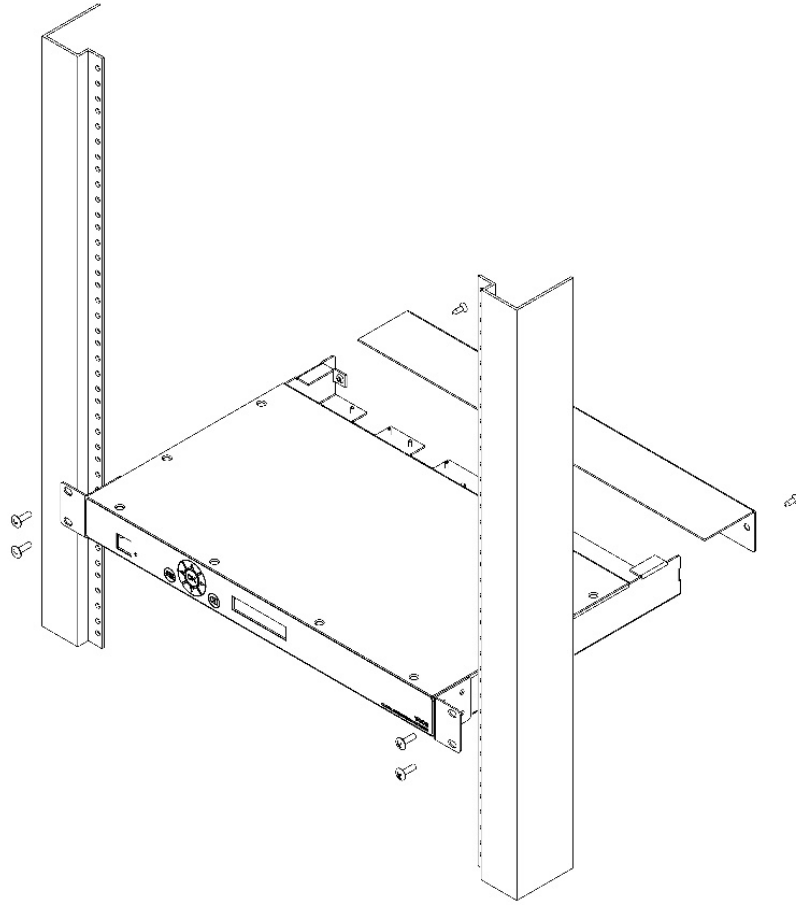


Figure 2