



### DC Feed and Ring Power Supplies for Voice/Fax and ISDN Modules



KM-Ringer



Ringer-2000



Ringer-2200

#### FEATURES

- DC power supplies for Kilomux-2000/2100 voice/fax and ISDN modules
- Provide DC feed (battery) and ringing voltages for connected telephones
- Compatible with all voice/fax modules with FXS interface
- Support E&M interfaces requiring -48 VDC
- Support phantom feeding for ISDN interfaces
- KM-Ringer plug-in module supports up to 32 voice channels (24 KVF.8/FXS voice channels)
- Ringer-2000 standalone unit supports up to 60 voice channels
- Ringer-2200 standalone unit supports up to 120 voice channels

#### DESCRIPTION

- Ringers are DC power supplies for the Kilomux-2000/2100 voice/fax modules that require loop-current feed (battery) and ring DC voltages.
- A Ringer is needed when a voice module is equipped with FXS-type interface for direct connection to a telephone set. Power is then required to provide the following functions:
  - DC feed (battery) voltage (-24 or -48 VDC) for the connected telephones;
  - High DC ring voltage (+72 VDC by AC-powered models or +60 VDC by DC-powered models) for conversion by the voice module to a 20 Hz AC ringing signal. (Needed only by certain FXS-type interfaces.)
- Voice modules with E&M interfaces for connection to PBXs, may also require the -48 VDC voltage for certain signaling standards or long line applications. (Note that the internal -12 VDC provided by chassis is sufficient for most PBXs.)
- A Ringer can also be used to supply the DC voltages used for the phantom feeding required by ISDN interfaces. For ISDN "U" interface phantom feeding which may require higher voltages, a differential voltage can be created by the KHS.U module, by combining the standard Ringer feed voltage output with the internal +12 VDC provided by the Kilomux chassis. For example, the -48 VDC Ringer output and the internal +12 VDC are combined to create a differential 60 VDC.
- The number of ISDN channels that can be supported depends on the output of the Ringer model (see Table 1), the current required and the actual line lengths.

# KM-Ringer, Ringer-2000, Ringer-2200

## DC Feed and Ring Power Supplies for Voice/Fax and ISDN Modules

### KM-Ringer Plug-in Module

- The KM-Ringer module is a 3U-high plug-in module for the KM-2000/2100 chassis, occupying three I/O slots. The module is completely encased, enabling it to also operate externally, placed outside the chassis. KM-Ringer features a single DC-output connector on the panel and supports up to 32 voice channels (24 voice channels in the case of KVF.8/FXS modules).
- Each KM-Ringer module is supplied with a splitter cable (CBL-RINGER-2) for supporting two voice modules. If more than two modules need to be connected, additional cables can be ordered with up to six connectors (see *Ordering*). Cables can be connected to one another, enabling a single KM-Ringer to be connected to multiple Kilomux voice modules (not to exceed the total of maximum supported channels).

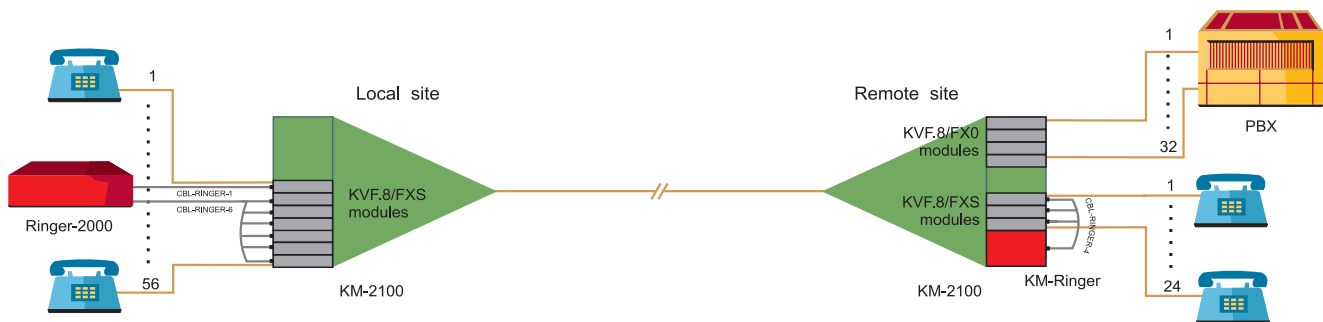
### Ringer-2000 Standalone Unit

- The Ringer-2000 standalone unit provides the DC power to support up to 60 voice channels. The Ringer-2000 supports all voltages required by the voice modules: -24 VDC or -48 VDC for feed, and +72/+60 VDC for ring signal.
- Ringer-2000 is a 1U-high standalone unit that can be installed in 19" racks. The unit has ten 3-pin DC-output connectors on the rear panel. The voltages are passed from the Ringer-2000 DC-output connectors to the DC-input connector of each voice module via connector cables (see *Ordering* for cable information).
- Ringer-2000 is available with a number of feed and ring voltage output options. The no ring voltage **Ringer-2000/48/115** or **Ringer-2000/48/230** options provide only -48 VDC for the DC feed. These options are suitable for E&M modules, or for FXS modules (like KVF.8/FXS) which do not require ring signal voltages.

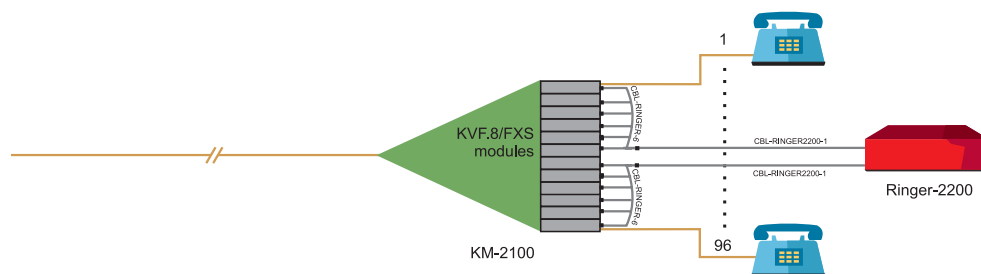
### Ringer-2200 Standalone Unit

- The Ringer-2200 standalone unit provides the DC power to support up to 120 voice channels. This is enough to support all 96 channels of a Kilomux-2100 chassis fully loaded with KVF.8/FXS modules. Ringer-2200 provides a -48 VDC output for feed and ring signal. Optionally, a +48 VDC output is also available.
- Ringer-2200 is a 1U-high standalone unit that can be installed in 19" racks. The unit has ten 6-pin DC-output connectors on the rear panel. The CBL-RINGER2200-1 cable is available for converting between the 6-pin connectors and the 3-pin input connectors of the Kilomux modules/splitter cables.
- To conform with both ANSI and ETSI rack mounting standards, the Ringer-2200 provides LED indicators on both front and rear panels. Thus, the indicators are always viewable, whether the unit is mounted with the cable rack connectors to the front or rear of the rack.

## APPLICATIONS



Ringer-2000 and KM-Ringer Supporting Combined Remote Extension and Hot-line Application



Ringer-2200 Supporting full KM-2100 chassis with 96 KVF.8 Voice Channels

# KM-Ringer, Ringer-2000, Ringer-2200

## DC Feed and Ring Power Supplies for Voice/Fax and ISDN Modules

### SPECIFICATIONS

**DC-Output Connectors**

KM-Ringer: one 3-pin female  
 Ringer-2000: ten 3-pin female  
 Ringer-2200: ten 6-pin female  
 See diagrams at right for connector pinout

**Power**

See Table 1 below

**Physical**

**KM-Ringer**

3U-high module occupies three I/O slots of KM-2000/2100 chassis

**Ringer-2000**

Height: 4.4 cm / 1.7 in (1U)  
 Width: 48 cm / 19.0 in (including integral rack-mount brackets)  
 Depth: 31 cm / 12.2 in  
 Weight: 2.1 kg / 4.6 lb

**Ringer-2200**

Height: 4.4 cm / 1.7 in (1U)  
 Width: 43 cm / 17.0 in  
 Depth: 31 cm / 12.2 in  
 Weight: 2.1 kg / 4.6 lb

**Indicators**

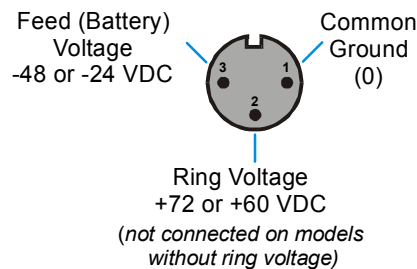
**KM-Ringer, Ringer-2000**

- RING VOLTAGE (green) lights when ring voltage is within the normal range
- BATTERY VOLTAGE (green) lights when feed voltage is within the normal range

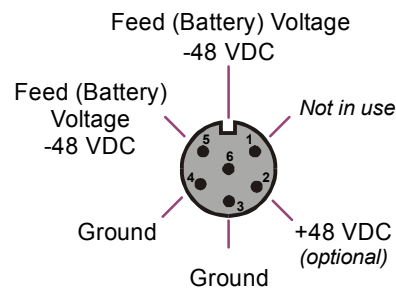
**Ringer-2200**

LEDs are repeated on both front and rear panels:

- -48V (green) lights when -48 VDC output voltage is within the normal range
- +48V (green) optional lights when +48 VDC output voltage is within normal range
- RINGER not in use



Pinout of 3-pin DC-Output Connectors



Pinout of 6-pin DC-Output Connectors

Table 1. Power Specifications

Model (according to operating voltage option)	Operating (Input) Voltage	Feed (Battery) Voltage Output	Ring Voltage Output
<b>KM-Ringer</b>			
AC	115 to 230 VAC ±10%, 50/60 Hz	-48 VDC ±5%, 0.6A max	+72 VDC ±5%, 0.5A max
-24 VDC	-24 VDC (-18 to -36 VDC)	-24 VDC ±5%, 0.6A max	+60 VDC ±5%, 0.5A max
-48 VDC	-48 VDC (-36 to -72 VDC)	-48 VDC ±5%, 0.6A max	+60 VDC ±5%, 0.5A max
<b>Ringer-2000</b>			
115 or 230 VAC with 24/72 output ordering option	115 or 230 VAC ±10%, 50/60 Hz	-24 VDC ±5%, 3.0A max	+72 VDC ±5%, 0.7A max
115 or 230 VAC with 48/72 output ordering option	115 or 230 VAC ±10%, 50/60 Hz	-48 VDC ±5%, 3.0A max	+72 VDC ±5%, 0.7A max
115 or 230 VAC with 48 output ordering option (no ring voltage)	115 or 230 VAC ±10%, 50/60 Hz	-48 VDC ±5%, 3.0A max	none
-24 VDC	-24 VDC ±5%	-24 VDC ±5%, 3.0A max	+60 VDC ±5%, 0.85A max
-48 VDC	-48 VDC ±5%	-48 VDC ±5%, 3.0A max	+60 VDC ±5%, 0.85A max
<b>Ringer-2200</b>			
115 or 230 VAC	115 or 230 VAC ±10%, 50/60 Hz	-48 VDC ±5%, 6.0A max	none
115 or 230 VAC with +48 VDC (P) output ordering option	115 or 230 VAC ±10%, 50/60 Hz	-48 VDC ±5%, 6.0A max	+48 VDC ±5%, 2.0A max

# KM-Ringer, Ringer-2000, Ringer-2200

## DC Feed and Ring Power Supplies for Voice/Fax and ISDN Modules

### ORDERING

#### RINGER-2000/+/#/\*

Standalone power supply unit, supports up to 60 voice channels

+ Specify DC feed voltage output:

**24** for -24 VDC

**48** for -48 VDC

# Specify **72** for ring voltage output (Default is without ring voltage)

**Note:** +72 VDC is provided by AC-powered models; +60 VDC is provided by DC-powered models

\* Specify operating (input) voltage:

**115** for 115 VAC

**230** for 230 VAC

**48** for -48 VDC

**24** for -24 VDC

**Note:** not all ordering option combinations are possible. Following are the available combinations:

RINGER-2000/24/72/115

RINGER-2000/24/72/230

RINGER-2000/24/72/24

RINGER-2000/48/72/115

RINGER-2000/48/72/230

RINGER-2000/48/72/48

RINGER-2000/48/115 (no ring voltage)

RINGER-2000/48/230 (no ring voltage)

#### KM-RINGER/^

Power supply module for Kilomux chassis, supports up to 32 voice channels

**Note:** a CBL-RINGER-2 splitter cable is supplied with each KM-Ringer

^ Specify operating (input) voltage:

**AC** for 115 to 230 VAC

**48** for -48 VDC

**24** for -24 VDC

#### RINGER-2200/~/&

Standalone power supply unit, supports up to 120 voice channels

& Specify operating (input) voltage:

**115** for 115 VAC

**230** for 230 VAC

~ Specify **P** for both +48 VDC and

-48 VDC outputs

(Default is for -48 VDC only)

### CABLES

#### CBL-RINGER-1

Cable for connecting a Ringer 3-pin DC-output connector to a single module

#### CBL-RINGER-2

Splitter cable for connecting a Ringer 3-pin DC-output connector to up to two modules

#### CBL-RINGER-4

Splitter cable for connecting a Ringer 3-pin DC-output connector to up to four modules

#### CBL-RINGER-6

Splitter cable for connecting a Ringer 3-pin DC-output connector to up to six modules

#### CBL-RINGER2200-1

Cable for connecting a Ringer-2200 6-pin DC-output connector to a module/splitter cable 3-pin DC-input connector



data communications

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