# TECHNICAL BULLETIN #3

AS OF AUGUST 1, 2008

# GLM-100E, CM-311E
# CM-311AE, CM-312E, CM-312AE

## CONNECTIONS FOR WIRELESS MICROPHONE APPLICATIONS

For more help, contact one of these technical support numbers:

| | |
|---|---|
| Crown | 800-342-6939 |
| AKG | 800-878-7571 |
| Audio-Technica | 330-686-2600 |
| Beyerdynamic | 800-293-4463 |
| Comtek | 800-496-3463 |
| Electro-Voice | 877-863-4168 |
| HM Electronics | 800-848-4468 |
| Lectrosonics | 800-821-1121 |
| Lightspeed | 800-732-8999 |
| Nady | 510-652-2411 |
| Paso | 800-231-3034 |
| Peavey | 877-732-8391 |
| Samson | 800-3-SAMSON |
| Shure | 847-600-8440 |
| Sony | 866-766-9272 |
| Telex | 800-553-5992 |
| TOA | 800-733-4750 |
| Vega | 800-877-1771 |

A Harman International Company

Crown Audio, Inc.
1718 W. Mishawaka Rd.
Elkhart, IN 46517-9439
TEL: 574-294-8000
FAX: 574-294-8FAX
www.crownaudio.com

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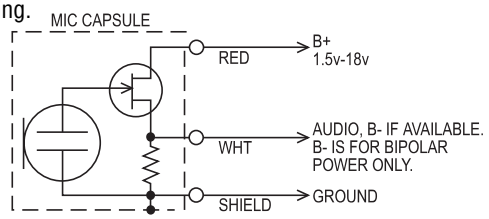
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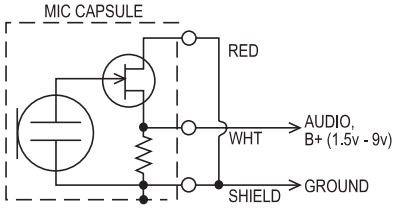
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# CONNECTIONS TO GLM-100E

You can connect the GLM-100E for unipolar or bipolar powering. With unipolar powering (B+ and ground), the GLM can handle up to 120 dB SPL without distortion. With bipolar powering (B+ and B- relative to ground), the GLM can handle up to 150 dB SPL. Not all transmitters provide bipolar powering.




GLM-100E WIRING, 3-WIRE POWER

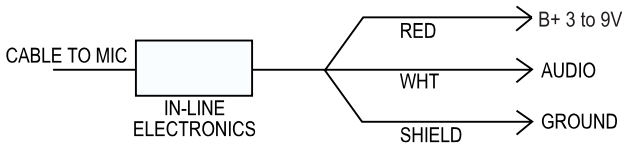



GLM-100E WIRING, 2-WIRE POWER

| MODEL | CONNECTOR | PINS |
|---|---|---|
| **AKG WMS40 (PT40) WMS400 (PT400) WMS4000 (PT4000)** | TA3F | 1-shield<br>2-white<br>3-red |
| **Audio-Technica ATW, T31, T35, T27, WT-15, T51, T75,** | Hirose HRI0-7P-4S | 1 and 2-shield<br>3-white<br>4-red |
| **ATW T21** | 4 pin DIN | case-shield<br>1-white<br>3-red |
| **Beyerdynamic TS-170, TSP, TS-600** | Lemo FG331 | 1-shield<br>2-red<br>3-white |
| **TS-190, TS-900 (UHF)** | 4-pin binder conn. #711 | 2-shield<br>3-white<br>4-red |
| **Comtek M72, M72-B** | 750 mono mini, 851 micro mini, Switchcraft TA4F, | 1-shield<br>2-white<br>3-red<br>Lemo 4-pin |
| **Electro-Voice MB2000A, MB2500** | Switchcraft TA4F | 1-red<br>3-white<br>4-shield |
| **HME TX-425, TX-550, TX-822** | Switchcraft TA4F | 1-shield<br>2-white<br>3-red |
| **Lectrosonics M185, UM190, UM195, M187, UM200** | Switchcraft TA5F | 1and 4-shield<br>2-red<br>3-white |
| **Lightspeed Technologies BP Series** | Hirose HR10-7P-4S | 1-shield<br>3-white<br>4-red |
| **Nady All models** | Switchcraft TA3F | 1-shield<br>2-red<br>3-white |
| **Paso MA-23, MA-27** | | Switchcraft TA3F<br>1-shield<br>2-white and red<br>3-jumper to pin 1 |
| **Peavey BPX** | Switchcraft TA3F | 1-red<br>2-shield and white |
| **Samson TX-3, UT-5, UT-4, BT-3, CT-2** | Hirose HR10-7P-6S | 1-red<br>2-white<br>6-shield |
| **Samson ST-2** | Hard wired | 1 and 2-shield<br>3-red (B+)<br>4-white (audio) |
| **Samson CT-3** | Hard wired | 1-red (B+)<br>2-white (audio)<br>3 and 4-shield |
| **Sennheiser SK-2012** | Sennheiser/ B&K microdot | Ground-shield and white<br>Center-red |
| | Lemosa | 2-red<br>3-white and shield<br>shell-shield |
| **Shure L-11, SC1, LX1, U-1 (UHF), T-1 UT-1, UC-1** | Switchcraft TA4F | 1-shield<br>2-red<br>3 and 4-white |
| **U1L-VA UC1L** | Lemo 4-pin | 1-white<br>2-red<br>4-shield<br>3-jumper to pin 1 |
| **Sony WRT-28, WRT-820A** | SMC-9 | 1-red<br>2-white<br>3 and 4-shield |
| **Telex WT-55, WT-60, WT-80, WT-150, WT-450** | Switchcraft TA4F or Lemo 4-pin | 1-shield<br>2-white<br>3-red |
| **TOA WM-340U, WM-370** | Mini phone plug | Tip-red,<br>Sleeve-shield and white<br>To prevent capsule damage from static sparks, solder a 3.3K resistor between white and tip. |
| **Vega** | Lemo 4-pin<br>F.O. 304<br>NYL U/3.2 | 1-white<br>2-red<br>4-shield |
| If RFI is a problem, solder a 560 pF cap. between pins 1 and 4. | | |
| | Switchcraft TA4F | 1-red<br>3-white<br>4-shield |
| **X-wire** | TA3F | 1-shield<br>2-white<br>3-red |

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# CONNECTIONS TO CM-311AE, CM-312AE AND CM-312E




| MODEL | CONNECTOR | PINS |
|---|---|---|
| **AKG**<br>**WMS40 (PT40)**<br>**WMS400 (PT400)**<br>**WMS4000 (PT4000)** | TA3F | 1-shield<br>2-white<br>3-red |
| **Audio-Technica**<br>**ATW**<br>**T35, T27,**<br>**WT-15** | Hirose HR10-7P-4S | 1 and 2-shield<br>3-white<br>4-red |
| **ATW T21**<br>(now obsolete) | 4 pin DIN | case-shield<br>1-white<br>3-red |
| **Beyerdynamic**<br>**TS-170, TSP**<br>**TS-600** | Lemo FG331 | 1-shield<br>2-red<br>3-white |
| **TS-190,**<br>**TS-900 (UHF)** | 4-pin binder conn. #711 | 2-shield<br>3-white<br>4-red |
| **Comtek**<br>**M-72, M72-B**<br>**M-182, M-82** | 750 mono mini,<br>851 micro mini,<br>Switchcraft TA4F | 1-shield<br>2-white<br>3-red<br>or TA3F, Lemo<br>4-pin |
| **Electro-Voice**<br>**MB2000A**<br>**MB2500** | TA4F | 1-red<br>3-white<br>4-shield. If RFI, use 200-560 pF capacitor between pins 3 and 4 |
| **R100** | see Telex notes | |
| **R200** | see Telex notes | |
| **HME**<br>**All models** | Switchcraft TA4F | 1-shield<br>2-white<br>3-red |
| HME note: To increase bass and reduce treble at the expense of output level, solder a 6.8K resistor between pin 2 and its wire inside the transmitter. | | |
| **Lectrosonics**<br>**M185, M187**<br>**UM190, UM195**<br>**UM200** | Switchcraft TA5F | 1-shield<br>2-red<br>3-white |
| **Lightspeed**<br>**Technologies**<br>**BP Series** | Hirose HR10-7P-4S | 1-shield<br>3-white<br>4-red |
| **Nady**<br>**All models** | Switchcraft TA3F | 1-shield<br>2-red<br>3-white |

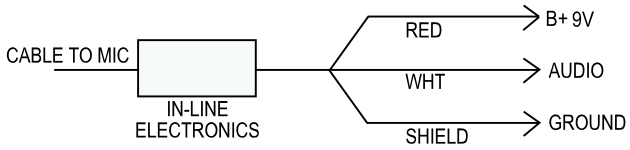
| MODEL | CONNECTOR | PINS |
|---|---|---|
| **Samson**<br>**TX-3, UT-4,**<br>**BT-3, CT-2** | Hirose HR10-7P-6S | 1-red<br>4-white<br>6-shield |
| **UT-5** | Hirose HR10-7P-6S | 1-red<br>2-white<br>6-shield |
| **ST-2** | No connector | 1 + 2-shield<br>3-red (B+)<br>4-white (audio) |
| **CT-3** | No connector | 1-red (B+)<br>2-white (audio)<br>3 + 4-shield |
| **Shure**<br>**L-11, SC1, LX1,**<br>**U-1 (UHF), T-1** | Switchcraft TA4F | 1-shield<br>2-red<br>3-white<br>4-jumper to pin 3 |
| **U1L-VA** | Lemo 4-pin UC1L | 1-white<br>2-red<br>4-shield<br>3-jumper to pin 1 |
| **Sony**<br>**WRT-820A** | SMC-9 | 1-red +5V<br>2-white<br>4-shield |
| **WRT-805A** | 3.5 mm mini-plug | T-white<br>R-red +5V<br>S-ground |
| **Telex**<br>**WT-55, WT-60,**<br>**WT-80, WT-150,**<br>**WT-450** | Switchcraft TA4F or Lemo 4-pin | 1-shield<br>2-white<br>3-red |
| **Vega** | Lemo 4-pin<br>F.O. 304<br>NYL U/3.2 | 1-white<br>2-red<br>4-shield |
| | Switchcraft TA4F | 1-red<br>3-white<br>4-shield |
| **X-wire** | TA3F | 1-shield<br>2-white<br>3-red |

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# CONNECTIONS TO CM-311E

The CM-311E works only on 9V.

If your transmitter supplies 9V at its connector, you can connect a CM-311E to your transmitter as described in the chart below.




NOTE:
To convert a CM-311 or CM-311A for wireless use, either cut the cable and add the CM-311AE EQ module or connect the beltpack XLR output to the transmitter input.
CM-311AE EQ module: shield = ground, white = audio, red = B+.
XLR: 1 + 3 = shield, 2 = audio (no B+ needed).

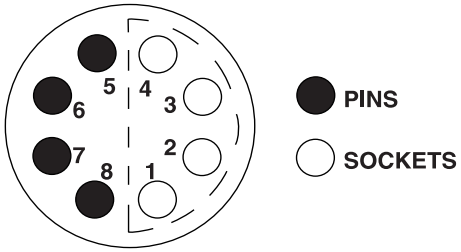
| MODEL | CONNECTOR | PINS |
|---|---|---|
| **Audio-Technica**<br>**ATW**<br>**T35, T27** | Hirose HR10-7P-4S | 1and 2-shield<br>3-white<br>4-red. For T31 only, remove connection, connect pin 4 to battery +. |
| **ATW 1031** | Hirose HR10-7P-4S | 1-shield<br>3-white<br>4-red. Remove connection, connect pin 4 to battery +. |
| **ATW T21** | 4 pin DIN | case-shield<br>1-white<br>3-red |
| **Beyerdynamic** | Lemo FG331 | 1-shield<br>2-red<br>3-white |
| **TS-190,** | 4-pin binder | 2-shield |
| **TS-900 (UHF)** | conn. #711 | 3-white<br>4-red. Remove connection, connect pin 4 to battery +. |
| **Comtek** | 750 mono mini, | 1-shield |
| **M-72, M72-B** | 851 micro mini, | 2-white |
| **M-182, M-82** | Switchcraft TA4F or TA3F, Lemo 4-pin | 3-red. Remove connection, connect pin 3 to battery +. |
| **Electro-Voice** | TA4F | 1-red |
| **MB2000A** | | 3-white |
| **MB2500** | | 4-shield. 470 pF cap. bet. pins 3 and 4 |
| **HME** | Switchcraft TA4F | 1-shield |
| **All models** | | 2-white<br>3-red |
| HME note: To increase bass and reduce treble at the expense of output level, solder a 6.8K resistor between pin 2 and its wire inside the transmitter. | | |
| **Lectrosonics**<br>**M185, M187**<br>**UM190, UM195**<br>**UM200** | Switchcraft TA5F | 1-shield<br>2-red. Remove connection, connect pin 2 to battery +.<br>3-white |
| **Lightspeed Technologies**<br>**BP Series** | Hirose HR10-7P-4S | 1-shield<br>3-white<br>4-red |

| MODEL | CONNECTOR | PINS |
|---|---|---|
| **Nady**<br>**All models** | Switchcraft TA3F | 1-shield<br>2-red. Remove connection, connect pin 2 to battery +.<br>3-white |
| **Samson**<br>**TX-3, UT-4**<br>**BT-3, CT-2** | Hirose HR10-7P-6S | 1-red<br>Remove connection, connect pin 1 to battery +.<br>4-white<br>6-shield |
| **UT-5** | Hirose HR10-7P-6S | 1-red<br>2-white<br>6-shield |
| **ST-2** | No connector | 1 + 2-shield<br>3-red (B+)<br>4-white (audio) |
| **CT-3** | No connector | 1-red (B+)<br>2-white (audio)<br>3 + 4-shield |
| **Shure**<br>**L-11, SC1, LX1,**<br>**U-1 (UHF), T-1** | Switchcraft TA4F | 1-shield<br>2-red. For Cm-311E only, contact Shure for 9V bias, mod.<br>3-white<br>4-jumper to pin 3 |
| **Sony**<br>**WRT-28,**<br>**WRT-820A** | SMC-9 | CM-312E only:<br>1-red<br>2-white<br>3 and 4-shield<br>or try 1-red, 3-white, 4-shield |
| **Telex**<br>**WT-55, WT-60,**<br>**WT-80, WT-150,**<br>**WT-450** | Switchcraft TA4F or Lemo 4-pin | 1-shield<br>2-white<br>4-red |
| **Vega** | Lemo 4-pin<br>F.O. 304<br>NYL U/3.2 | 1-white<br>2-red<br>4-shield |
| | Switchcraft TA4F | 1-red. Remove connection, connect pin 1 to battery +.<br>3-white<br>4-shield |

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# WIRING DIAGRAMS

## Connecting Crown Microphones to a Micron Transmitter

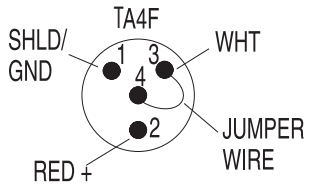



**LEMO FFA2C308 MIC CABLE CONNECTOR**
**(VIEW FROM SOONNECTORLDERING SIDE OF C)**

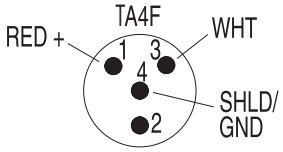
| MODEL | PINS |
|---|---|
| CM-10E | 3 - yellow<br>6 - shield<br>4 - black<br>Jumper between 5 & 6<br>4.7K between 8 & 3 |
| CM-311AE | 8 - red<br>3 - white<br>6 - shield<br>Jumper between 5 & 6 |
| CM-312AE | 8 - red<br>3 - white<br>6 - shield<br>Jumper between 5 & 6 |
| GLM-100E | 8 - red<br>3 - white<br>6 - shield<br>Jumper between 5 & 6 |

## Wiring CM-311AE, CM-312AE or GLM-100E to TA3F and TA4F Connectors

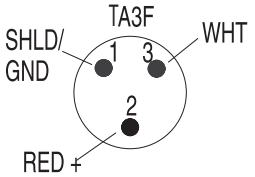
ALL VIEWS ARE INSIDE CABLE CONNECTOR



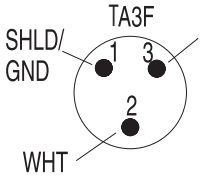

SHURE



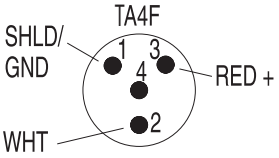

VEGA 2020



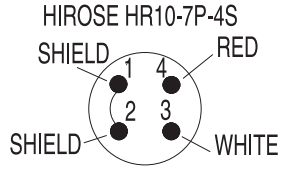

X WIRE




AKG WMS40, 400, 4000
PT40, PT400, PT4000




TELEX




AUDIO-TECHNICA
ATW T35, T27,
WT-15

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