

Interface Technology Group, Inc.



Model DA-422-IRIG-2X4

RS-422 and Analog Distribution Amplifier

Operation and Maintenance Manual

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Specifications:

Power Input:..... 90 – 265 VAC 47-470 Hz.
.....IEC Input connector 10W Nominal

Fuse:.....1 Amp

Dimensions:..... 19” Wide X 1.75” High (1 RU) X 10.25 Deep

Weight:.....4.1 Pounds

Operating Environment:..... 32° F to 100° F, 0 – 95% RH Non condensing

Signal Inputs:

RS-422 Simplex (Input only), Analog both using RJ-45 connectors

Analog input voltage: For constant output +or- 1dB = 1.0 to 5.5 V P-P. For constant output +or- 3dB = .750 to 10.0 V P-P.

Signal Outputs:

4 RS-422 Simplex outputs Using RJ-45 Connectors

4 Analog Simplex outputs Using RJ-45 Connectors, each separately adjustable in level.

Analog: Frequency response: +or- 3dB from 20 Hz to 50 kHz.

Output Impedance: Nominal 120 ohms each output

Output Level: 0 to 8 V P-P balanced transformer coupled.

DB-9 Female connector – RS-232 Status Alarm

Ethernet network port for Status communications

Overview:

The model DA-422-IRIG-2X4 is designed to accept a RS-422 signal input signal. Amplify and send to 4 outputs the same signal with the same or very closely the same delay characteristics. An analog input accepts an audio frequency signal, passes it through a variable gain AGC system, through separate potentiometers, drives the transformer coupled output stages.

Monitoring of the signal outputs is done to determine fault conditions. In the RS-422 mode, no input fault monitoring is done. A bi-color LED flashes with the data mark and space signals. Status of the 8 outputs are displayed via 8 2-color LEDs on the front panel. Faults cause the LED to glow red while no faults are displayed as green. No power to the unit is indicated by no light coming from the LED's. Note that turning any of the four analog potentiometers down very low will result in an output fault. Faults typically are reported at .5 V P-P output level.

Faults are also reported via the serial port or the Ethernet port on the rear panel of the unit. Faults are reported when they happen and are reported again every 2 minutes. It is possible to mask out continuing faults. A message is sent when the fault is cleared.

Operation:

Connect a suitable AC mains power source to the rear IEC connector. Connect an RS-422 signal to the RJ-45 RS-422 input connector and connect an audio signal to the RJ-45 Analog input connector. Turn on the AC power switch on the rear panel.

Rear Panel Connections:



Inputs:

(RS-422): (1) RJ-45 Shielded version

RS-422 Pin 7=D+, Pin 8=D-, sides= Gnd.

(Analog): (1) RJ-45 Shielded version

Analog Pin 4,5 – Balanced, transformer coupled

Outputs RS-422:

(RS-422): (4) RJ-45 Shielded version

RS-422 Pin 7=D+, Pin 8=D-, sides= Gnd.

(Analog): (4) RJ-45 Shielded version

Analog Pin 4,5 – Balanced, transformer coupled

Status Port RS-232:

RS-232 Pin 2=T, Pin 3=R, Pin 5=Gnd.

Ethernet port.

AC INPUT: AC mains voltage is applied through the IEC connector.
90– 265 VAC 47-470 Hz.

Power Supply:

The distribution amplifier uses a “Universal Input” switching power supply for cool and reliable operation. The power supply accepts any common voltage between 90 and 265 VAC or 100 to 370 Volts DC without any adjustment. A separate line filter is built into the DA-422-IRIG-2X4 for an additional measure of EMI suppression. The Power supply used is UL listed and approved by several other agencies.

Remote Status:

Connecting a computer running a terminal program such as Hyperterminal set up as 9600-N-8-1 allows control and status information to be passed from or to the distribution amplifier. Connections for RS-232 are described in the section above.

Hitting Enter (C/R) will cause the DA-422-IRIG-2X4 to respond with: DA-422-IRIG-2X4 #XXXX> Where XXXX is the serial number of the unit.

KEYWORDS:

The following are keywords or words that are used by the DA-422-IRIG-2X4 to receive status or issue commands to the unit. The keywords may be upper or lower case. Incorrect typing or misunderstood words are returned as typed followed by a question mark.

STATUS (C/R) Returns the status of the distribution amplifier.

MASK (C/R) Masks current alarms from being reported every 2 minutes

UNMASK (C/R) Unmasks all alarms.

HELP or ? (C/R) Returns list of valid keywords.

Entering the keyword “Status” results in the DA-422-IRIG-2X4 displaying the current status including output faults, and power supply voltages.

If a fault is detected, the DA-422-IRIG-2X4 will output a fault message identifying the fault. Every two minutes, the message will be repeated unless the fault is cleared. When the fault clears, the DA-422-IRIG-2X4 will output a message stating the fault has cleared.

If two minute fault reminders are not desired, typing the command MASK will cause the DA-422-IRIG-2X4 to mask all current faults and stop reporting every two minutes. If a fault that was masked is cleared, the fault clear message will be sent. If the fault re-occurs, the masking for that port will not be set and the fault will be reported every 2 minutes.

Typing the command “Unmask” will remove all fault reporting masking.

Ethernet Port:

The Ethernet port may be used in exactly the same way as the RS-232 port by using a Telnet program to connect to the IP address of the DA-422-IRIG-2X4. The IP address of the port may be set to a fixed address or be dynamically set through DHCP. The factory default is DHCP mode. The default telnet port is 10001. The default XPORT control port is 9999.

The Ethernet port module is a Lantronix XPort module. It is recommended that the Lantronix web site WWW.lantronix.com be consulted to understand how to use the interface. A utility program from Lantronix called Device Installer (current version 4.1.0.9) should be downloaded and used to set up the IP address. This utility program makes it easy to set up the parameters of the XPort device to customize it for the particular network application.

Note that the XPort must be configured to provide a Modem Ctrl Out (DCD) signal on configurable pin (CP) #1 (input, active low). This is necessary for the DA-422-IRIG-2X4 to switch control ports from the RS-232 to the Ethernet port when a telnet session is established.

When the IP address is properly configured, a telnet session may be started to communicate with the DA-422-IRIG-2X4. To do so on a typical windows based computer, select “start”, “run” then enter “CMD”, and “OK”. A cmd.exe window will open. In the window type “telnet 192.168.1.140 10001”. The actual IP address will of course have to be used (instead of 192.168.1.140) The telnet program will notify you of a successful connection. Pressing the “enter” key a few times should return the unit id from the DA-422-IRIG-2X4.

Routine Maintenance:

Remove dust from the cabinet when it accumulates. The front panel may be cleaned with a soft cotton cloth. Use only a small amount of mild soap and water solution to dampen the cloth if necessary.

No routine checks or adjustments are required.