

COMANCHE ARROWTM



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1. The COMANCHE ARROW™ Terminal Board

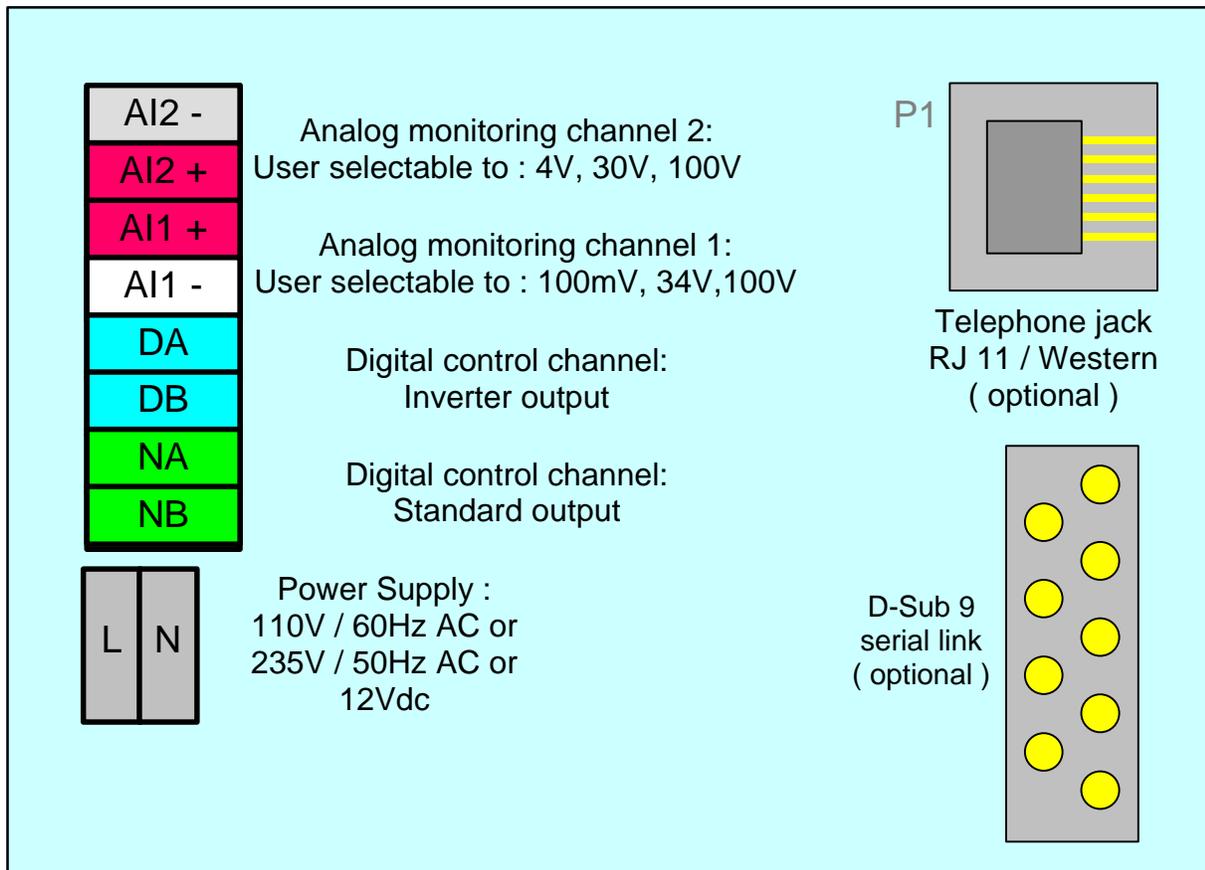


Fig. 1 : Terminal board

Connecting the Power Supply

The supply voltage depends on the internal power supply of the ARROW™. If a transformer is supplied the appropriate input voltage can be found on its label. The AC supply voltage then needs to be terminated at L and N, regardless of any phase. In case of a DC-Converter (7805), the supply voltage of 12 V dc is as well connectd to L and N, regardless of polarity.

SAFETY PRECAUTION

Always make sure to have the appropriate device, since applying high voltage to a 12V system will not only destroy the device itself, but will also harm personell as well as result in severe damage to surrounding.

[Connecting an internal Modem](#)

The internal modem can be mounted on top of the ARROW™ system. It can easily be located as the CERMETEK device U22. To activate it, the RJ11 western plug needs to be connected to the phone system.

[Connecting an external modem](#)

If an external modem connection is required, the CERMETEK device on the ARROW™ will be replaced by an appropriate adaptor board. (See Chapter 5) An external modem can then be used by connecting it to the D-SUB 9 plug at location U22. Pinout of the male connector is as follows :

Name	Signal	Pin	(D-Sub 25)	Direction
CD	Carrier Detect	1/9	8/25	M to A
TxD	Transmit Data	2/9	3/25	M to A
RxD	Receive Data	3/9	2/25	A to M
DTR	Terminal Ready (RTS, DTR)	4,7/9	20,4/25	A to M
GND	Signal Ground	5/9	7/25	Common

[Connecting the analog monitoring channels](#)

The ARROW™ system comes with 2 analog monitoring channels :

I. 100mV, 34V, 100V – Shunt Reading or Rectifier Voltage

The first channel is custom selectable to one of three presets (See Chapter 3, jumpers). In any case, the negative has to be connected to A1-, the positive to A1+.

II. 4V, 30V, 100V – Reference Cell or Rectifier Voltage

The second channel is custom selectable to one of three presets (See Chapter 3, jumpers). In any case, the negative has to be connected to A2-, the positive to A2+.

[Connecting the digital control channel](#)

The binary control of ARROW™ is a Photo-MOS relay. Maximum Voltage applied to the device is 12V, the maximum current is 100mA. The connections are made through NA and NB. The polarity is of no electrical relevance but helps while designing a special wiring. Note, that DA and DB represent the inverted state of NA and NB. Thus, a One-Of-Two selector can easily be created.

2. The COMANCHE ARROW™ Status LEDs

The ARROW™ has several status LEDs to assist during the installation :

The Modem LEDs

A group of 4 LEDs shows the actual status of either the internal or the external modem :

- LED32 / RING : This LED indicates in incoming call.
- LED33 / CD : The ARROW™ modem has connection to another modem. (Carrier detect)
- LED35 / RxD : The ARROW™ is receiving data from the remote Modem. (Receive Data)
- LED34 / TxD : The ARROW™ is transmitting data to the remote Modem. (Transmit Data)

The digital channel LEDs

These LEDs represent the status of the binary outputs :

- LED31 is lit, when the potential free output Dx (DA / DB) is short.
- LED36 is lit, when the potential free output Nx (NA / NB) is short.

Miscellaneous LEDs

- LED11 POWER LED : Indicates sufficient power supply
- LED22 CPU LED : Indicates main processor state
- LED21 STATE LED : Flashes once on system RESET

3. The COMANCHE ARROW™ Configuration Jumpers

Only 3 jumper groups are required to finally configure the ARROW™ system :

RESET Jumper JP1

Reset Procedure Disconnect power from system
Short RESET Jumper
Reconnect power
Be sure LED21 flashes once
Wait for 30secs
Remove Power
Open RESET Jumper
Reconnect power

Analog Channel 1 Configuration Jumpers : 1/34V, 1/100V

Selection	100mV (102,4mV)	- Open all Jumpers
	30V (30,22V)	- Short Jumper 1/34V only
	100V (102,5V)	- Short Jumper 1/100V only

Analog Channel 2 Configuration Jumpers : 2/4V, 2/30V, 2/100V

Selection	4V, 20M Ω (4,32V)	- Short Jumper 2/4V only
	30V (30,02V)	- Short Jumper 2/30V only
	100V (101,2V)	- Short Jumper 2/100V only

5. The COMANCHE ARROW™ Adaptor

This adaptor is required to connect the COMANCHE ARROW™ to any external communication device. In those installations, it replaces the internal CERMETEK modem.

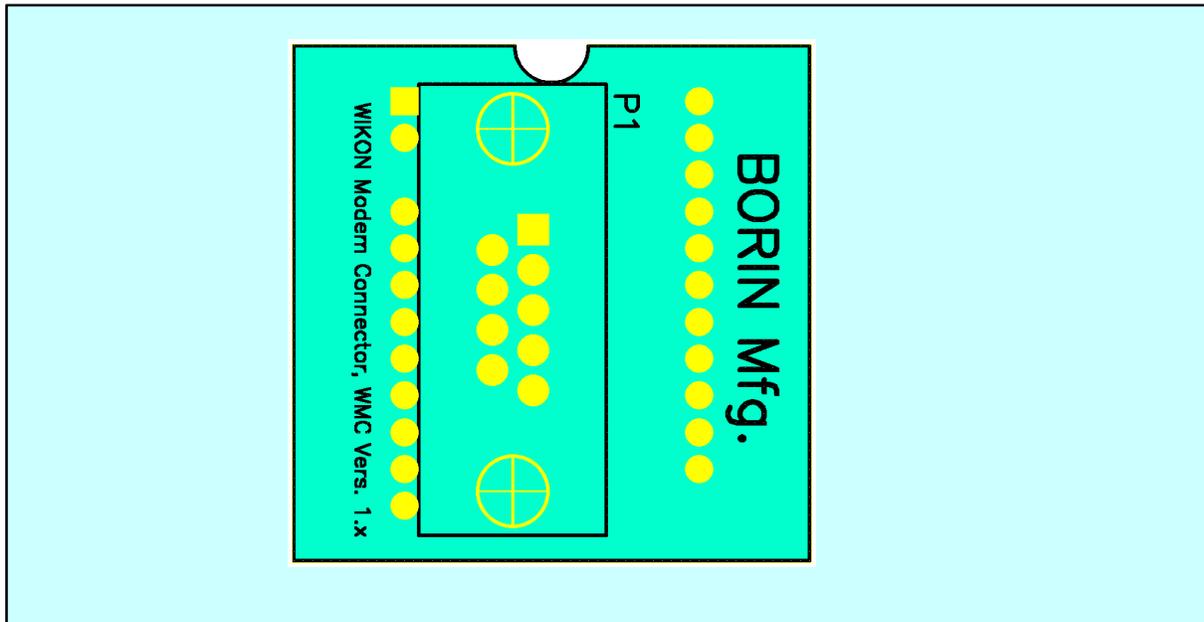


Fig. 3 : External Modem Adaptor

6. The COMANCHE ARROW™ – General Specifications

- Two isolated analog monitoring channels for devices like:
 - CP rectifier, voltage output
 - CP rectifier, shunt reading
 - Pipe to soil potential / High input impedance of 20M Ω
- One isolated digital control channel for synchronized interruption or reference cell selection
- Highly accurate real time clock
- Internal 4kByte datalogger for upto 2700 readings
- Internal Thermometer
- Universal power supply w/ UPS option
- Versatile data transmission interface for all sources of communication incl. internal modem
- Same software as for all COMANCHE™ devices
- Compact Size (3" x 6" x 2")

7. The COMANCHE ARROW™ – Block Diagram

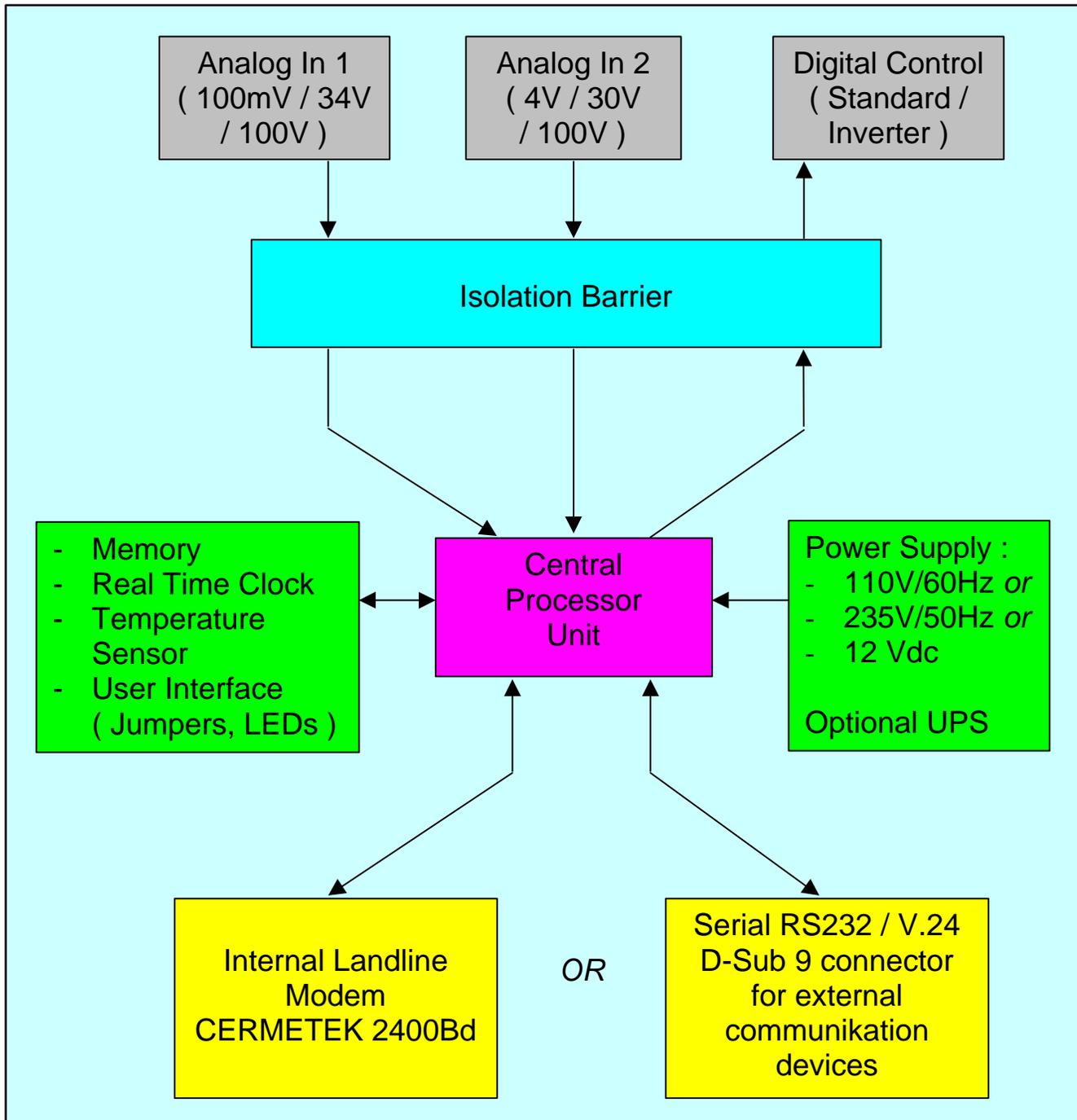


Fig. 4 : Block Diagram