<u>COMANCHE Steletto</u>

Installation and System Description
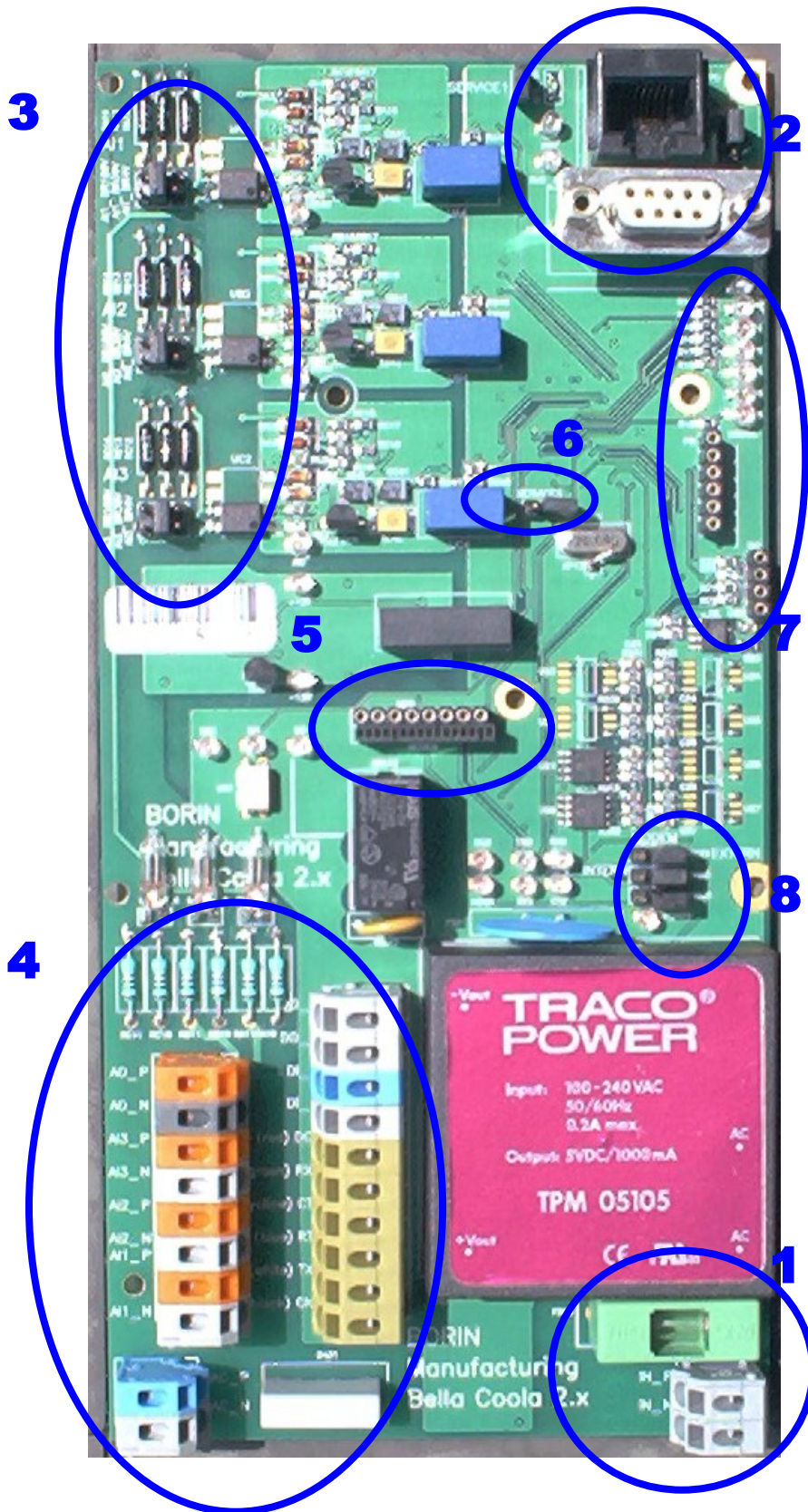### *Rev. 0.24*

BORIN Manufacturing Inc.
5741 Buckingham Parkway, unit B
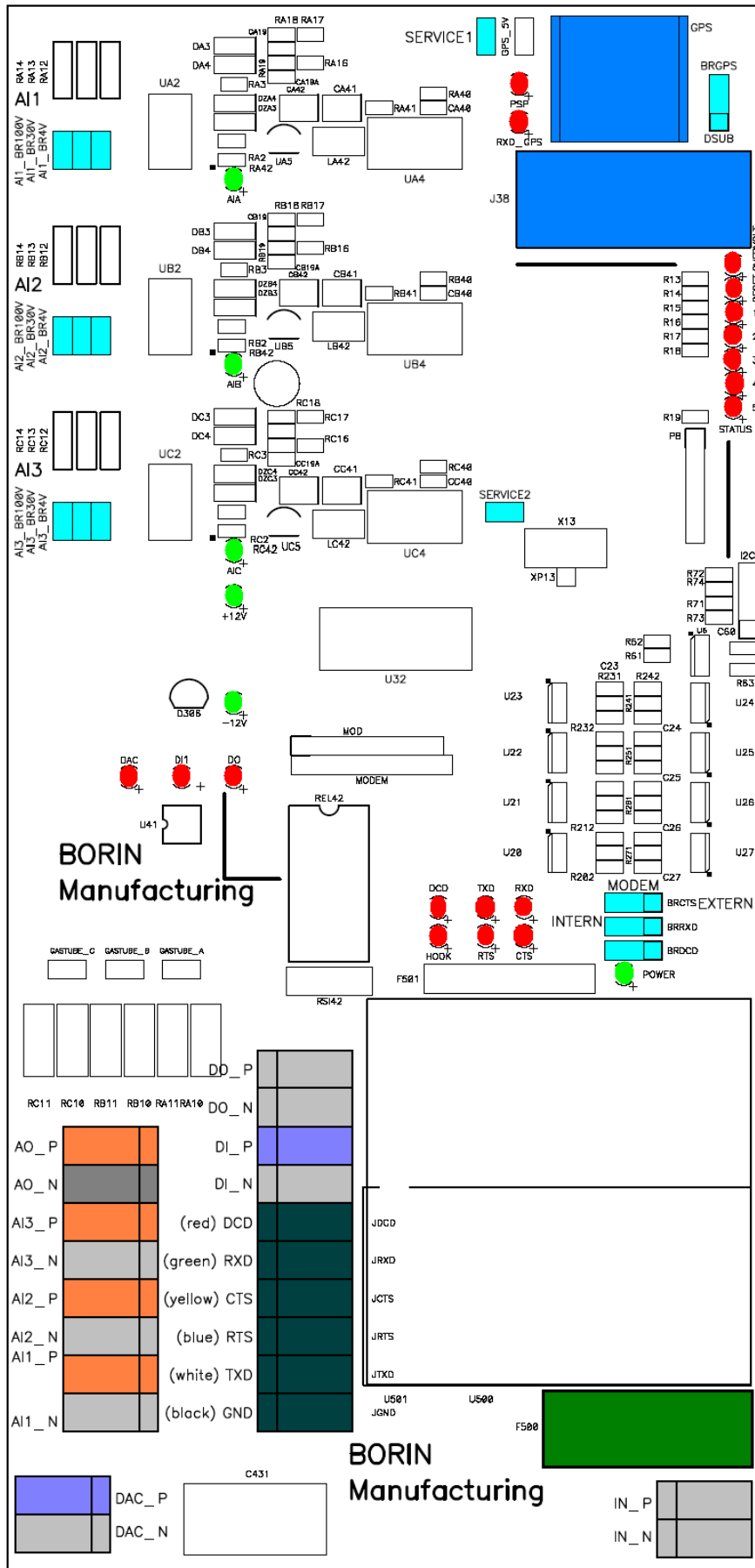**Culver City, CA 90230**

Telephone: 310-822-1000
Facsimile: 310-338-3434
www.borin.com
info@borin.com

Content

B O R I N   M a n u f a c t u r i n g
5741 Buckingham Parkway, Unit B, Culver City, CA 90230 Phone (310) 822 1000 , Fax (310) 338 3434   Thomas A. Theissen, Director R&D

Page 2 of 9

1. Hardware Layout (HW index)

B O R I N   M a n u f a c t u r i n g
5741 Buckingham Parkway, Unit B, Culver City, CA 90230   Phone (310) 822 1000 , Fax (310) 338 3434   Thomas A. Theissen, Director R&D

Page 3 of 9

User accessible Parts :

Jumpers

Status LED's

Power LED's

Fuse

GPS

B O R I N   M a n u f a c t u r i n g

5741 Buckingham Parkway, Unit B, Culver City, CA 90230   Phone (310) 822 1000 , Fax (310) 338 3434   Thomas A. Theissen, Director R&D

Page 4 of 9
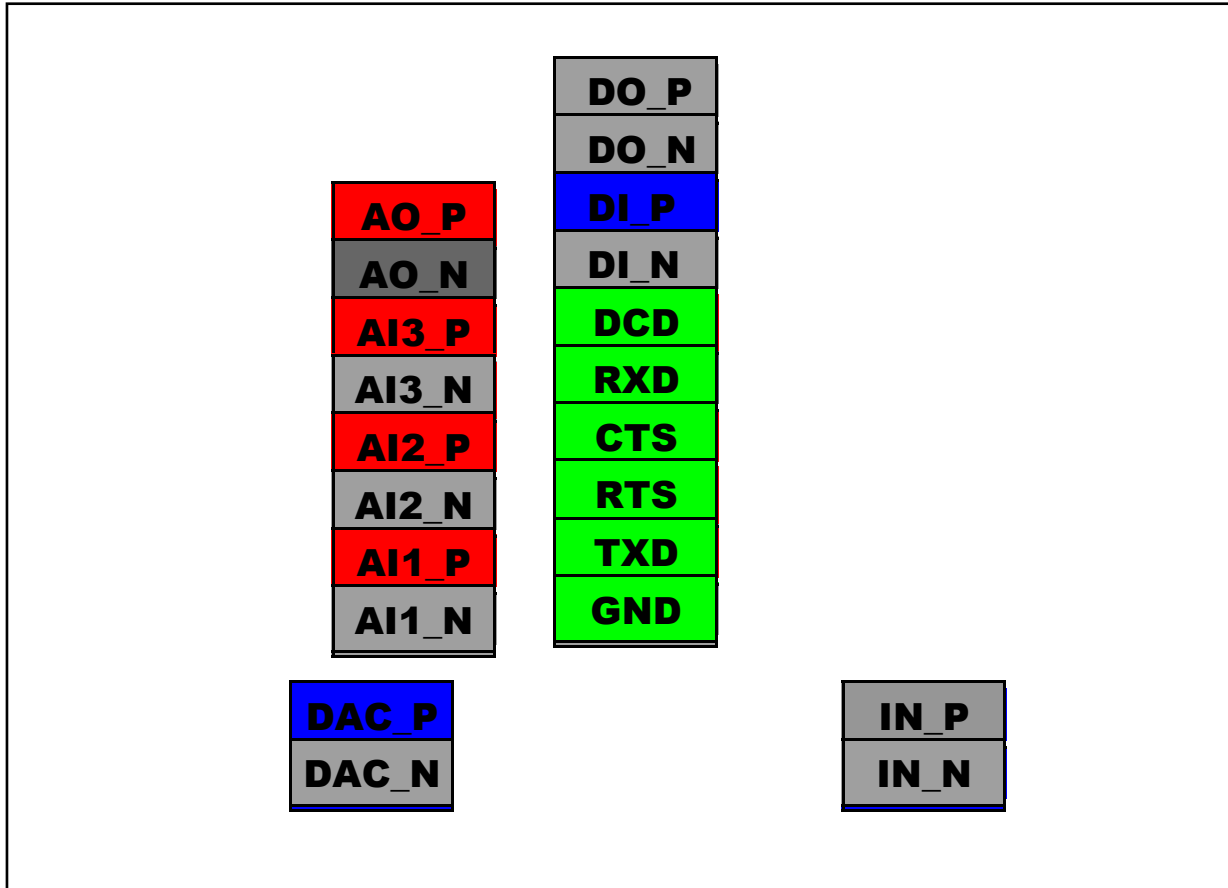
2. Terminals

Fig. 1 : Terminal Board

Terminal Name	Function	Index / Hardware Layout
IN_P	Power Supply, Positive	**1**
IN_N	Power Supply, Negative	**1**
DAC_P	Digital Monitoring for AC	**4**
DAC_N	Digital Monitoring for AC	**4**
AO_P	Analog Control, Positive	**4**
AO_N	Analog Control, Negative	**4**
AIx_P	Analog Monitoring, Positive	**4**
AIx_N	Analog Monitoring, Negative	**4**

Terminal Name	Function	Index / Hardware Layout
DO_P	Digital Control, Positive	**4**
DO_N	Digital Control, Negative	**4**
DI_P	Digital Monitoring, Positive	**4**
DI_N	Digital Monitoring, Negative	**4**
DCD (red)	DCD / from Modem	**4**
RXD (green)	RxD / from Modem	**4**
CTS (yellow)	CTS / from Modem	**4**
RTS (blue)	RTS / to Modem	**4**
TxD (white)	TxD / to Modem	**4**
Gnd (black)	Gnd / Modem	**4**

3. GPS

Use Connector GPS (Hardware Index **2**) to connect the BORIN GPS Receiver. Please make sure to use an appropriate CAT.5 cable. For test and verification purpose, the GPS NMEA protocol can be monitored and controlled via **J38** (D-Sub9/f). Please make sure to set your software to 4800/n/8/1. The LED *PSP* will indicate a valid incoming *Pulse per Second* signal. It will flash once a second for 800ms if reception is available. The LED *RXD_GPS* will indicate an incoming GPS data stream. It will flash once with every incoming protocol. The Jumper BRGPS/DSUP will switch the GPS receiver's input to either

```
- BRGPS : COMANCHE System
- DSUB  : D-Sub9/f connector
```

4. Power Supply

The supply voltage depends on the internal power converter of the Steletto. If an AC-Converter is supplied (90V-240V) the power is connected to **IN_P** / **IN_N**, regardless of any phase. In case of a DC-Converter (9V-18V/12V-24V), the negative of the voltage is connected to **IN_N**, the positive to **IN_P**.

An internal fuse is provided at location F500 (HW index **1**) *Please make sure to replace a blown fuse with a new one of the same value only !*

If power is provided properly, the LED's *POWER, AIA, AIB, AIC, +12V* and *-12V* should be on. (HW index **3**)

5. Modems

An internal modem can be mounted on top of the Steletto system (HW index **5**). To activate it, the appropriate jumpers need to be set, and the RJ11 western plug needs to be connected to the phone system.

An external modem can be used by setting the appropriate jumpers (HW index **8** - Jumpers set to the left: Internal modem is activated; Jumpers set to right : External Modem is activated.) and connecting it to the communication clamps. The colors of a BORIN modem cable match as follows:

```
Name   Signal                          Color        Pins D-Sub9   D-Sub25
DCD    Carrier Detect                  Red          1             8
RxD    Receive Data                    Green        2             3
CTS    Clear to send                   Yellow       8             5
RTS    Ready to send (RTS,DTR)         Blue         4+7           4+20
TxD    Transmit Data                   White        3             2
GND    Signal Ground                   Black        5             7
```

A group of 6 LEDs shows the actual status of either the internal or the external mode:

```
DCD : The Steletto modem has a connection to another modem.
TXD : The Steletto sends data to the remote modem.
RXD : The Steletto is receiving data from the remote modem
HOOK: The Steletto modem picked up the phone line.
RTS : The Steletto is ready to receive data from the local modem.
CTS : The Steletto Modem is ready to transmit data.
```

6. Digital Monitoring / AC

The Steletto is prepared to monitor an incoming AC input. Please use **DAC_P** and **DAC_N** (HW index **4**) for utilizing this feature. The channel will go to active mode, if the incoming voltage is at least 65V. The LED *DAC* will represent the channel's state.

7. Digital Monitoring / Standard

This channel is provided for potential free (dry) contacts. Connect the device output to the terminals **DI_P** and **DI_N** (HW index **4**): The LED *DO* will indicate the channel's state.

8. Digital Control

The binary control of Steletto is a 250V / 2A relay. However, a self-resetting protective fuse is connected in series to the positive leg. Thus, this channel is limited to 60V and 900mA. The connections are made through **DO_P** and **DO_N**. (HW index **4**) The polarity is of no electrical relevance, but helps while designing a special wiring. The LED *DI1* will indicate the channels state.

9. Analog Monitoring

The Steletto has three (3) identical analog monitoring channels. The respective terminals are **AI1_P/AI1_N**, **AI2_P/AI2_N**, **AI3_P/AI3_N**. (HW index **4**). For each channel, an individual jumper field for the optimum input configuration can be found. These jumper settings correspond to the following input impedances:

```
AIx_BR100V :  1 MOhm || 20nF
AIx_BR30V  :  1 MOhm || 20nF
AIx_BR4V   : 30 MOhm || 20nF
```

Depending on the input amplification (*See COMANCHE Software*), the input channel ranges are as follows:

Channel	Software	Input Range	Max. Offset	Accuracy
AIx_BR100V	Amp.on	±6,49 V	–	–
AIx_BR100V	Amp.off	±103,85 V	±20 mV	0,50%
AIx_BR30V	Amp.on	±31,36 V	±60 mV	0,50%
AIx_BR30V	Amp.off	–	–	–
AIx_BR4V	Amp.on	±0,2623 V	±0,05 mV	0,25%
AIx_BR4V	Amp.off	±4,197 V	±0,9 mV	0,25%

Note : In case of a power failure, all analog inputs of the Steletto are disconnected from their terminals. Thus, all monitoring channels will go to a high-impedance state.

10. Analog Control

The Steletto has one analog control channel for multi purpose applications. Its range is 0V to 10V. The control's output negative is **AO_N**, the positive **AO_P**. (HW index **4**)

11. Service / Feature Connector

The following LEDs are provided for additional system information:

LED OVERVOLT	Overvoltage at (at least one) Analog Monitoring Channel
LED RESET	Indicates Startup procedure (Incl. EEPROM erase)
LED STATUS 1	Represents SERVICE1 jumper (Software driven)
LED STATUS 2	Represents SERVICE2 jumper (Software driven)
LED STATUS 3	Reserved for internal states
LED STATUS 4	Acknowledged PPS
LED STATUS 5	Internal Timer 1 (1 sec. ON; 1 sec. OFF)

The following jumpers are provided for additional setup :

SERVICE1   **System RESET**

Open on Power-up -> Normal Startup

Short on Power-Up -> System Reset
(Incl. – EEPROM erase
        - RESET counter)

SERVICE2   **Select Modem Baudrate**

Open -> 4.800Bd – 33.800Bd
(Flexible Baudrate)

Short -> 9.600 Bd
(Fix Baudrate)

The following connectors are provided for system setup:

I2C   Feature connector for additional system components

P8   System connector for software updates