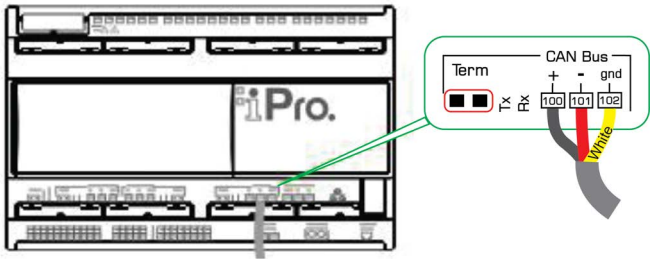
CAN Bus Communication Port Usage and Wiring Between iPro and Site Supervisor with IPX Modules

Best Practices Guide

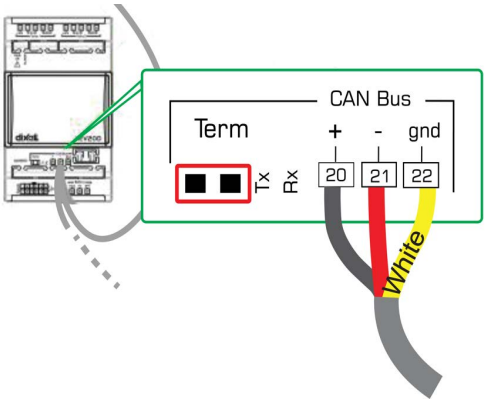
Recommendations

- Recommended Belden 8772 or 8771 cable with three wires plus shield.
- Do not connect the Belden cable shield to the ground or to other terminals to avoid unwanted current return path. Clip and insulate shield at both ends of the cable.
- Line terminations for the two end of line devices ONLY of the CAN Bus cable are recommended for all installations and is mandatory for cable lengths over 100 meters.
- The maximum length the CANBUS network is 400 meters.
- Maximum of 15 IPX devices on CAN Bus network with Site Supervisor.

iPro System has a dedicated jumper to terminate the line



IPX Expansion Module has a dedicated jumper to terminate the line



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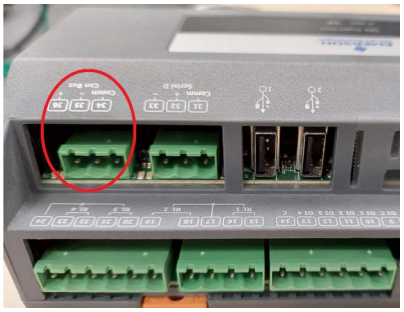
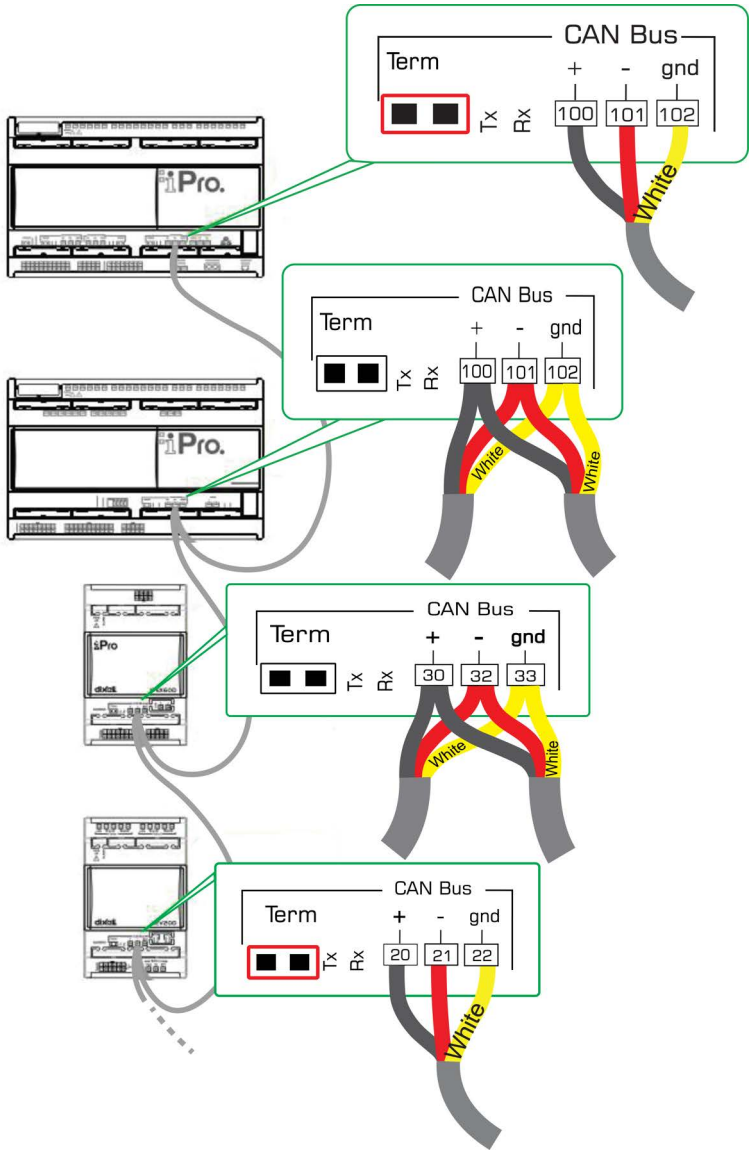
Site Supervisor has a dedicated mini dip-switch to terminate the line



- To correct faulty termination switch or jumper, connect external 150 ohms from CAN Bus + to CAN Bus - terminals.
- With power OFF and CAN cable connector removed, the ohm meter can be used to verify termination switch of Site Supervisor. Test from the CAN Bus + to CAN Bus - terminals.
- Termination is approximately 130 ohms, and No Termination is approximately 1000 ohms or greater.

Example of Daisy-chain Cable with TWO End of Line Terminations

- Termination must be connected only to the first and to the last device in the daisy-chain cable. Having more than two terminations in a daisy-chain may cause communication errors.



CAN Bus Quick Troubleshooting Guide

The following use cases report communication problems:

1. IPro: If the TX and RX LEDs of the iPro do not blink

- CAN Bus has not been enabled on the Isagraf Application.
- There is a wiring issue in the system. Verify the following: wiring polarity is correct, only two terminations are in the cable, and cable is wired daisy-chain.

2. IPX: If the TX and RX LEDs of the IPX do not blink

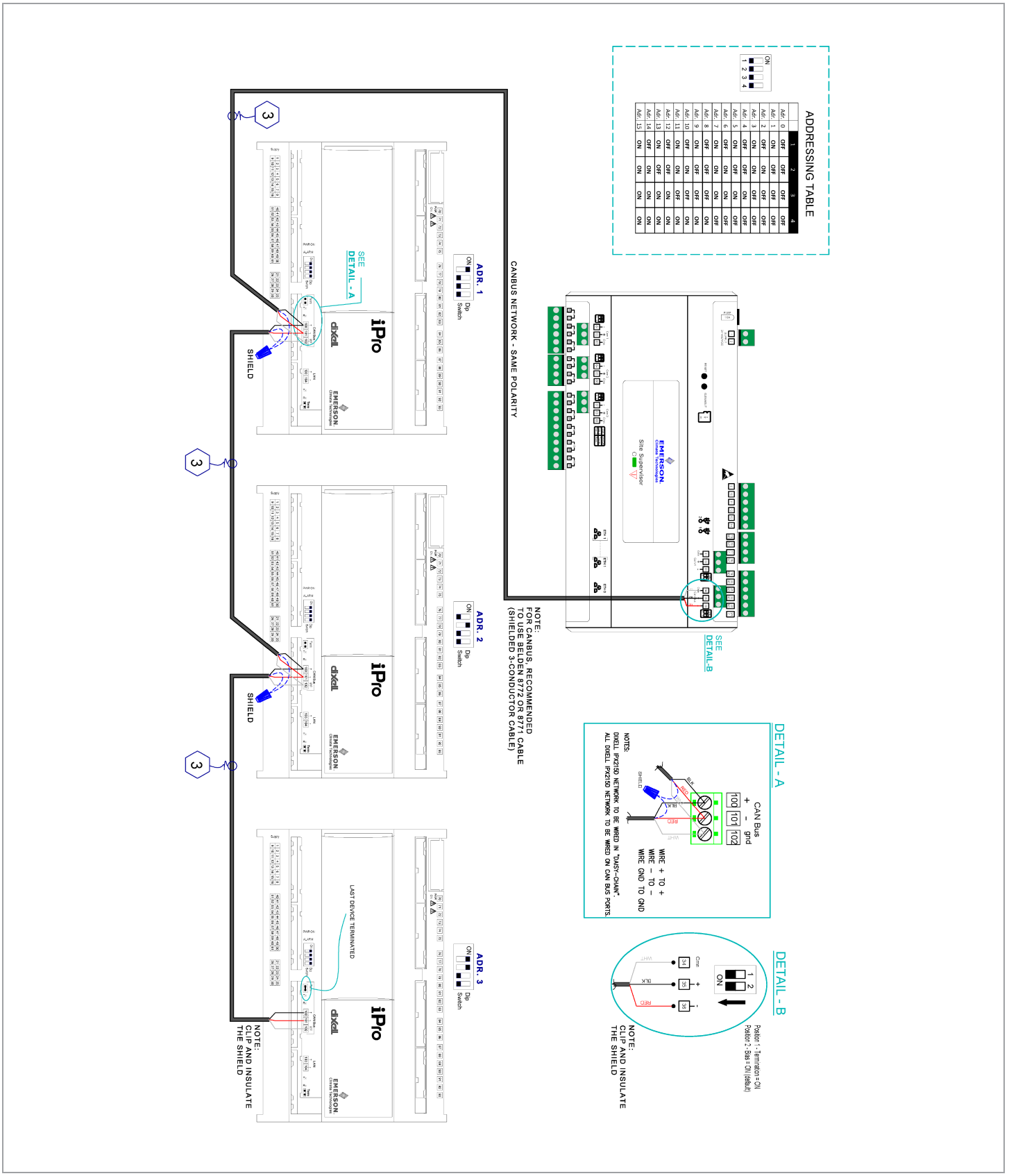
- There is an issue in address setting. On IPX, the address of the device is set via a dip-switch and numbering is binary as shown in the table below:

		1	2	3	4
Adr.	0	OFF	OFF	OFF	OFF
Adr.	1	ON	OFF	OFF	OFF
Adr.	2	OFF	ON	OFF	OFF
Adr.	3	ON	ON	OFF	OFF
Adr.	4	OFF	OFF	ON	OFF
Adr.	5	ON	OFF	ON	OFF
Adr.	6	OFF	ON	ON	OFF
Adr.	7	ON	ON	ON	OFF
Adr.	8	OFF	OFF	OFF	ON
Adr.	9	ON	OFF	OFF	ON
Adr.	10	OFF	ON	OFF	ON
Adr.	11	ON	ON	OFF	ON
Adr.	12	OFF	OFF	ON	ON
Adr.	13	ON	OFF	ON	ON
Adr.	14	OFF	ON	ON	ON
Adr.	15	ON	ON	ON	ON

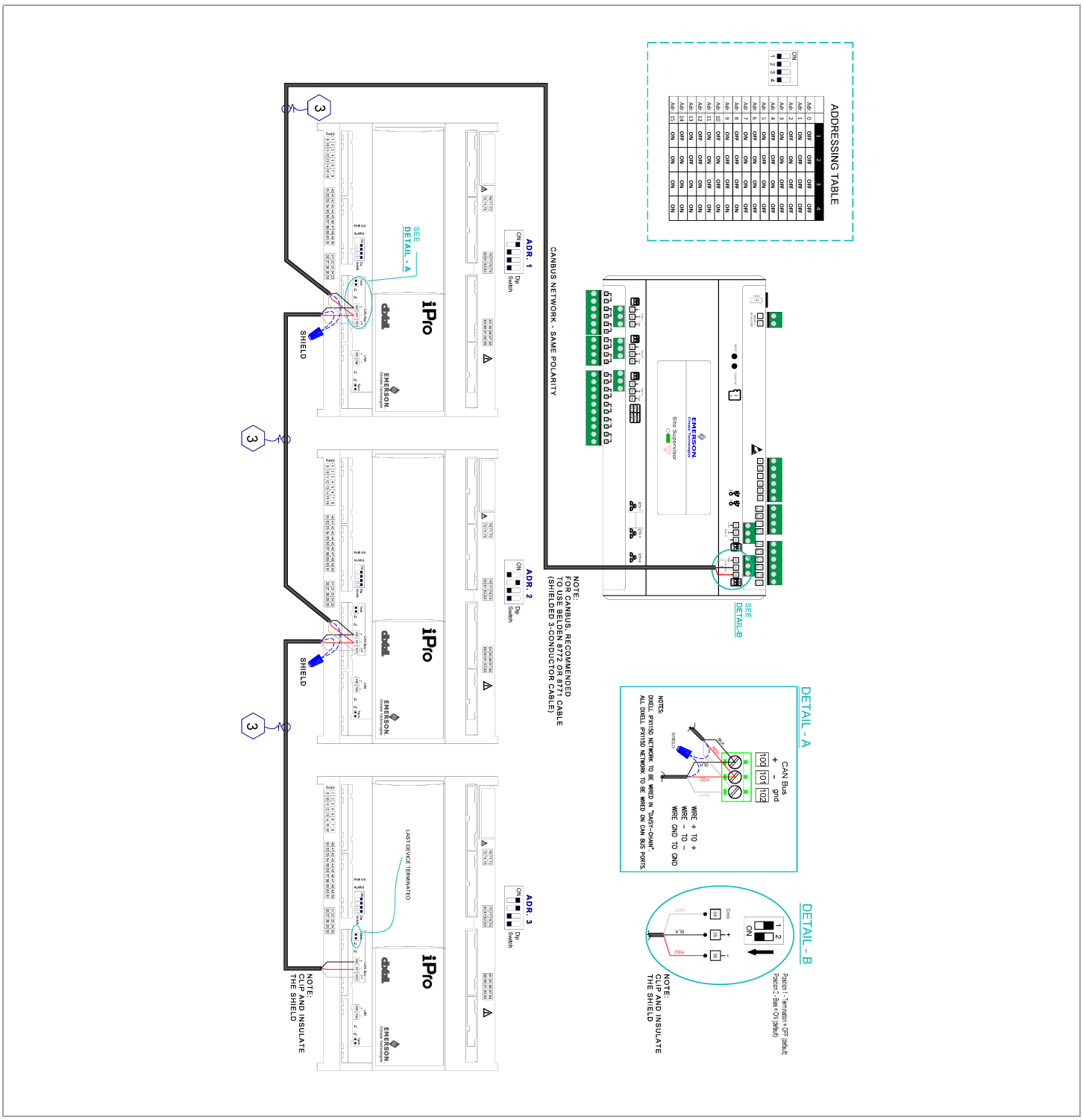
- There is a wiring issue in the system. Verify the following: wiring polarity is correct, only two terminations are in the cable, and cable is wired daisy-chain.

3. Site Supervisor: If the LEDs of the Site Supervisor do not blink

- There is a wiring issue in the system. Verify the following: wiring polarity is correct, only two terminations are in the cable, and cable is wired daisy-chain.
- If no IPX devices are defined in Site Supervisor, CAN Bus is not launched - no LEDs.
- If a device is defined and polarity is reversed, LEDs illuminate at approximately 1 Hz.



Supervisor and IPX215D Module



Supervisor and IPX115D Module