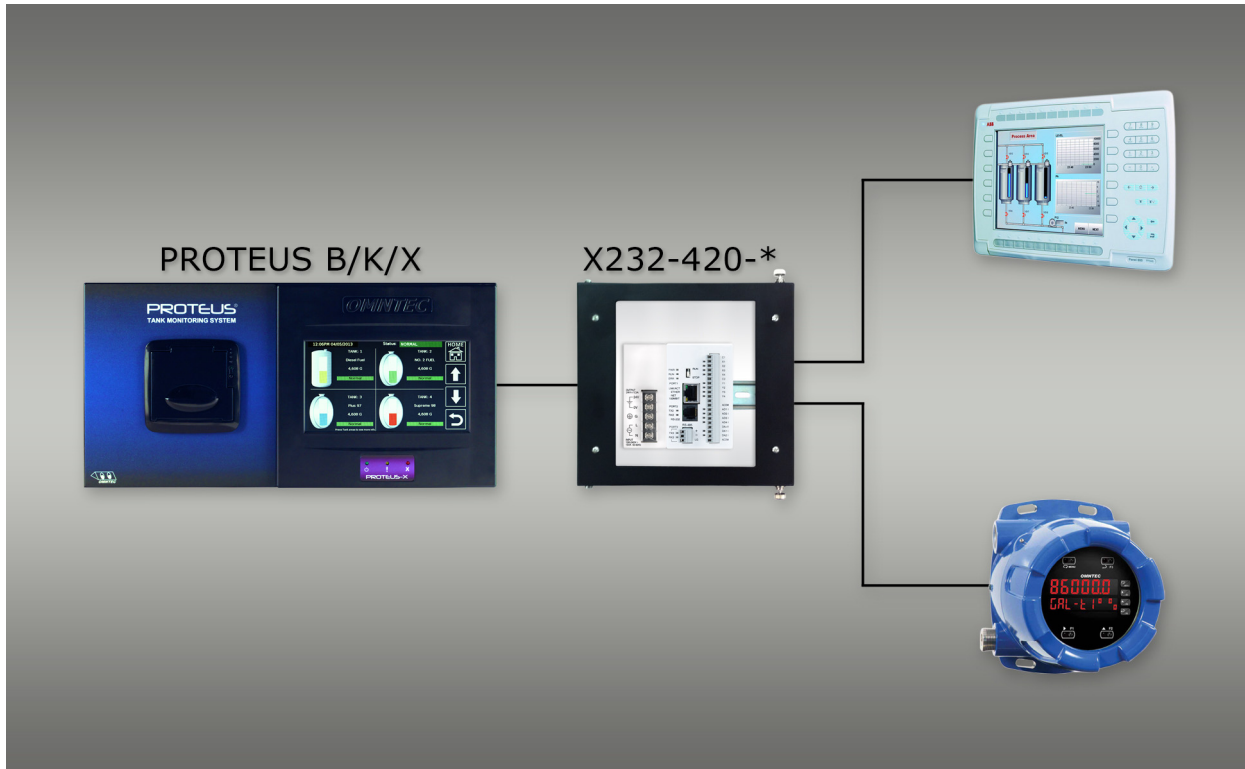




PROTEUS® 4 to 20 mA Interface Module Sink Version

Part Number: X232-420-2
X232-420-4
X232-420-6



Description

The OMNTEC X232-420 interface module is a free standing/self-enclosed device for use with the OEL8000III/Proteus ATG that has up to 34** 4 to 20 milliamp outputs. These outputs are configured to the tank volume for remote monitoring of any probe/tank in the ATG system.

Features

- 2 standard (up to 34 optional**) 4 to 20 mA Sink outputs (Source available upon request)
- Allows for remote real-time data monitoring of ATG tank levels
- Factory calibrated
- For isolated and non isolated applications
- 4 relay outputs standard, 6-240 VAC / 6-27 VDC Form A (SPST) relays, 0.5 amp/point, 1 common***
- RS-485 compatible (extra hardware may be needed)****

Usage

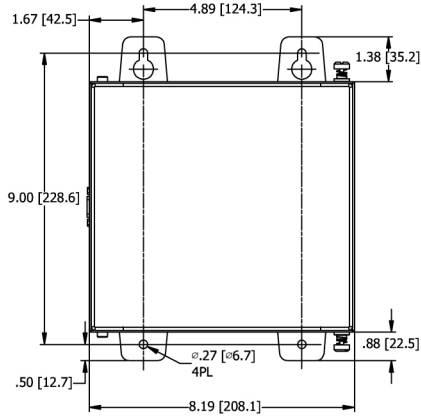
- Remote level output of tank level or height (optional)
- Building management systems
- SCADA

* Denote number of channels

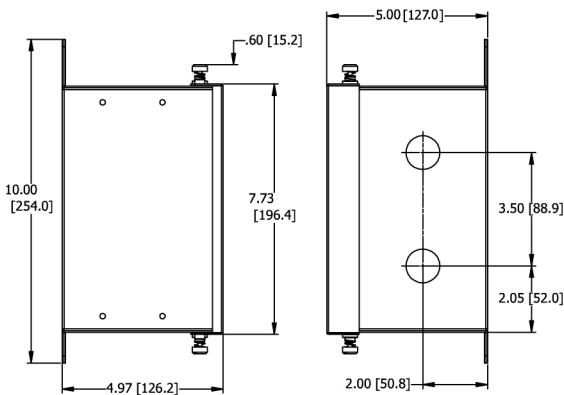
** Contact manufacturer for applications requiring more than (10) 4-20 mA outputs.

*** Contact manufacturer for relay programming options.

**** Contact manufacturer - additional relays available

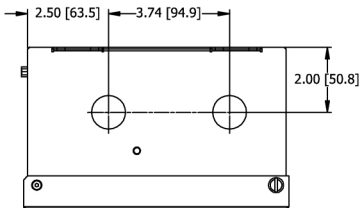


FRONT VIEW

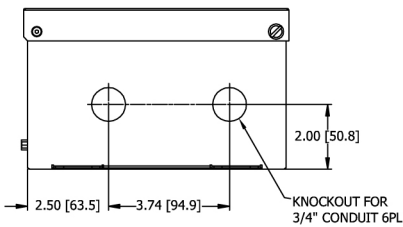


LEFT VIEW

RIGHT VIEW



TOP VIEW



BOTTOM VIEW

Specifications	
Supply Voltage	100-240VAC 1 amp 50-60Hz
Operating Temperature	32°F - 131°F
Ambient Humidity Range	30% - 95% (non-condensing)
Outputs	2 standard (up to 34 optional**)
Output Range	4 -20 mA (Sink) <i>*Source available upon request*</i>
Resolution	12 bit (.004 mA)
Loop Supply Voltage	DC24V
Full-Scale Calibration Error	±1% maximum
Accuracy vs. Temperature Error	±100 ppm / °C maximum
Weight	1 lb.
Connections	Screw Terminal
Compatible Controllers	PROTEUS Series OEL8000III-B OEL8000III-K OEL8000III-X
Agency Approvals	UL508 (File No. E157382, E316037); CE (EN61131-2)
Communications	MODBUS RTU via RS-232 / RS-485 / Ethernet

Note: Current published specifications are subject to change without notification. Verify specifications with manufacturer.

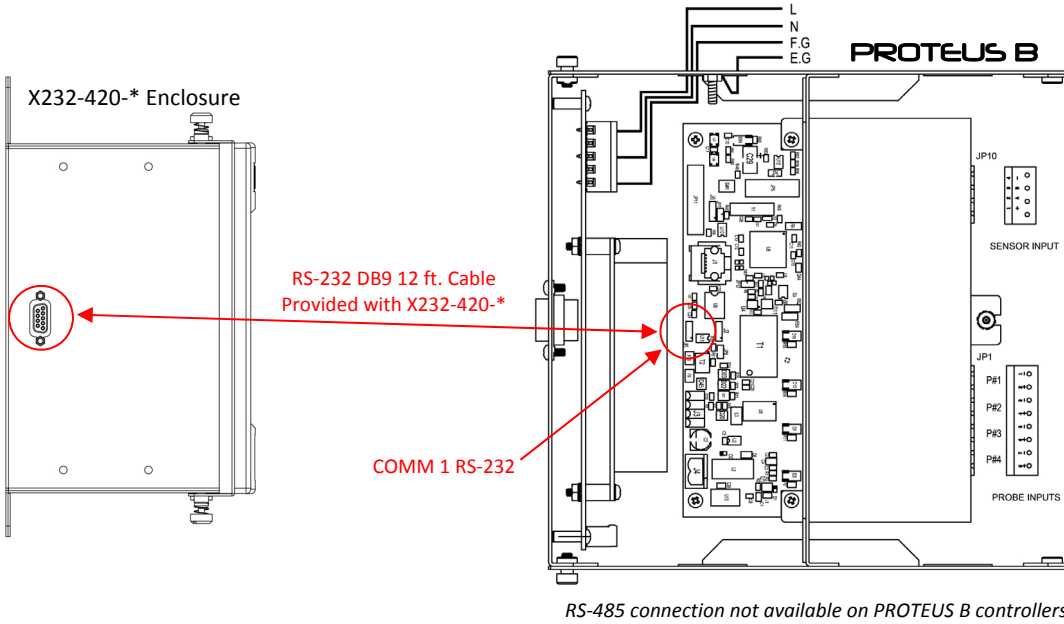
* Denote number of channels

** Contact manufacturer for applications requiring more than 10 4-20 mA outputs.

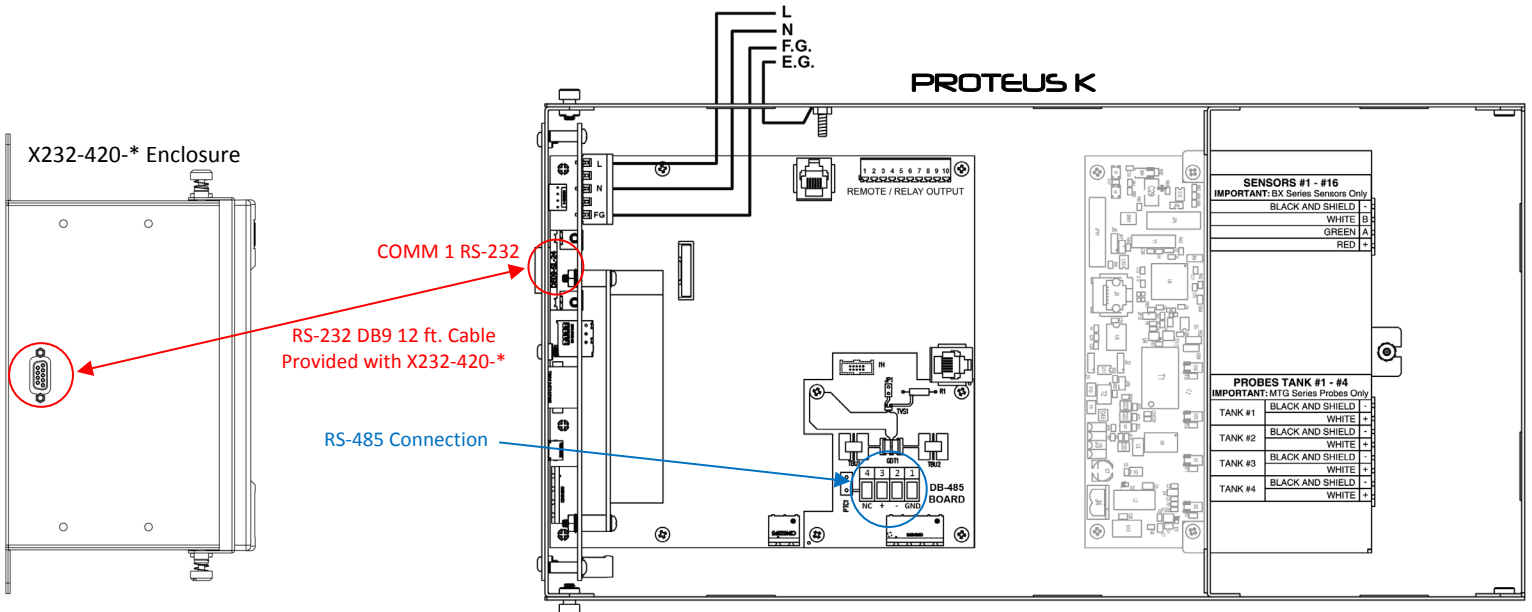
*** Contact manufacturer for additional relay options.

- Using the provided DB-9 Serial Cable connect the X232-420-* Module DB9 RS-232 port to the PROTEUS DB9 Serial Port. This is found on the left side of the PROTEUS-K unit, or the bottom left side of the PROTEUS-X unit.

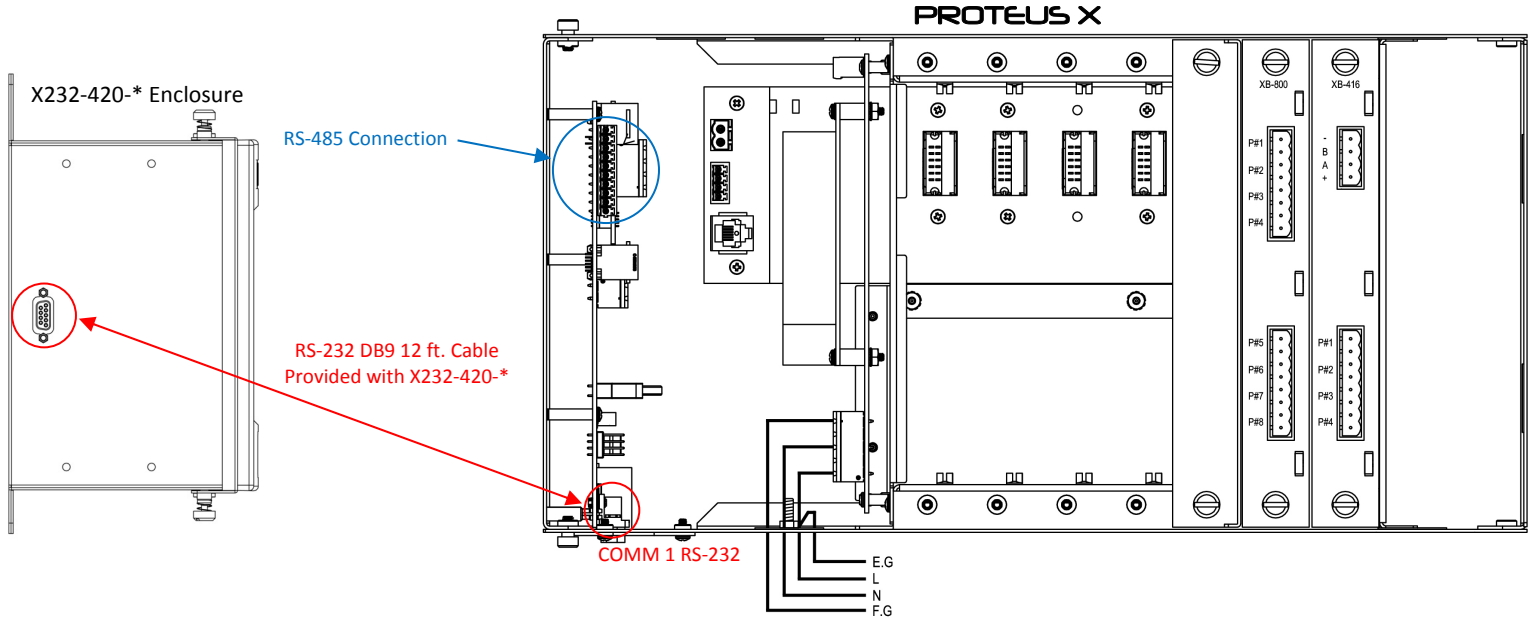
RS-232 DB9 Cable between X232-420-* and PROTEUS-B Controller



RS-232 DB9 Cable between X232-420-* and PROTEUS-K Controller

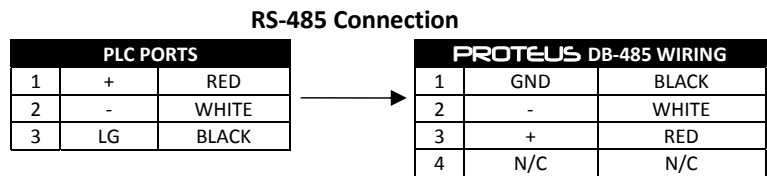


RS-232 DB9 Cable between X232-420-* and PROTEUS-X Controller

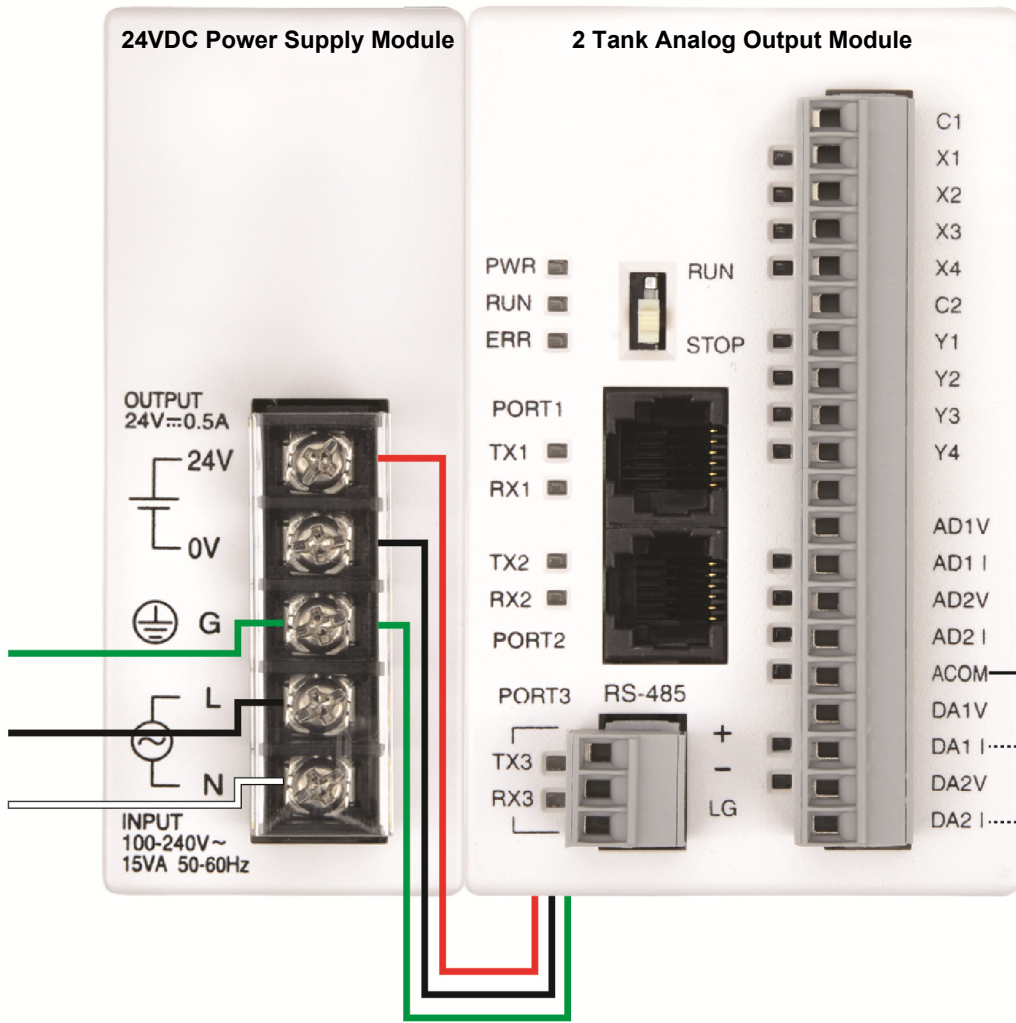


- Verify that the Comm 1 Port RS-232 Settings on the PROTEUS Controller by pressing HOME>UTILITIES>HELP MENU>REMOTE SETTINGS. The Comm 1 Port remote settings are pre-programmed at the factory and should match the following:

Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Comm Type	MODBUS
MODBUS Address	2 (default)
MODBUS Offset	0



Please Note: The PROTEUS Controller will need the MODBUS option enabled for the X232-420-* module to function. The MODBUS option will be enabled by default at the factory when ordered with X232-420-* module. Modbus RS-232 is available on PROTEUS K/X controllers with MCU firmware version E2AA and greater. Modbus RS-232 is available on PROTEUS B controllers with MCU firmware version MCU_P2AI and greater. Please consult with factory if X232-420-* module is being added to existing controller or for replacement controllers.

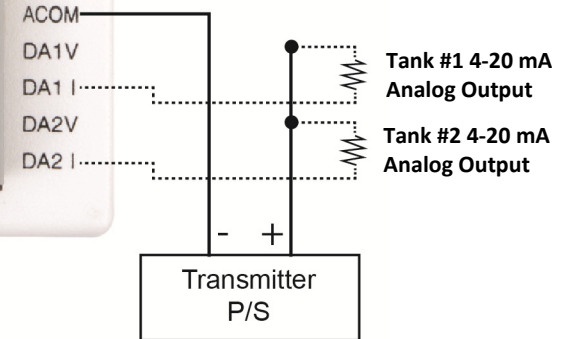


4-20 mA Analog Output Wiring	
ACOM	Power Supply (-)
*DA1I	Tank #1 4-20 mA(+)
*DA2I	Tank # 2 4-20 mA(+)

24VDC Power Supply	
Red	(+)
Black	(-)
Green	GND

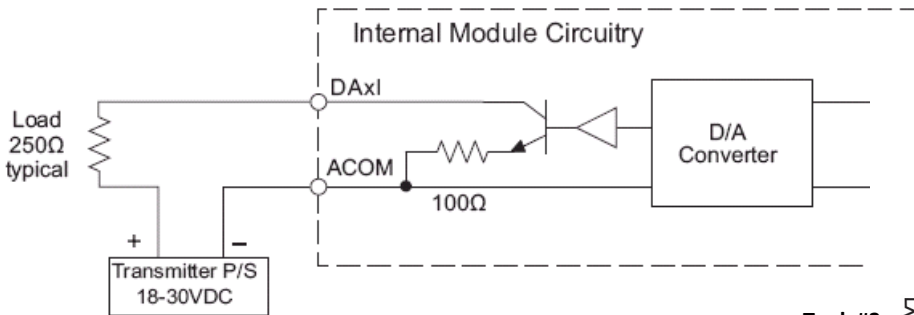
Load Impedance: DC24V: 900 Ω maximum

Wiring Diagram



Can use external 18-30VDC transmitter power supply or internal 24VDC power supply

Analog Current Output Circuit



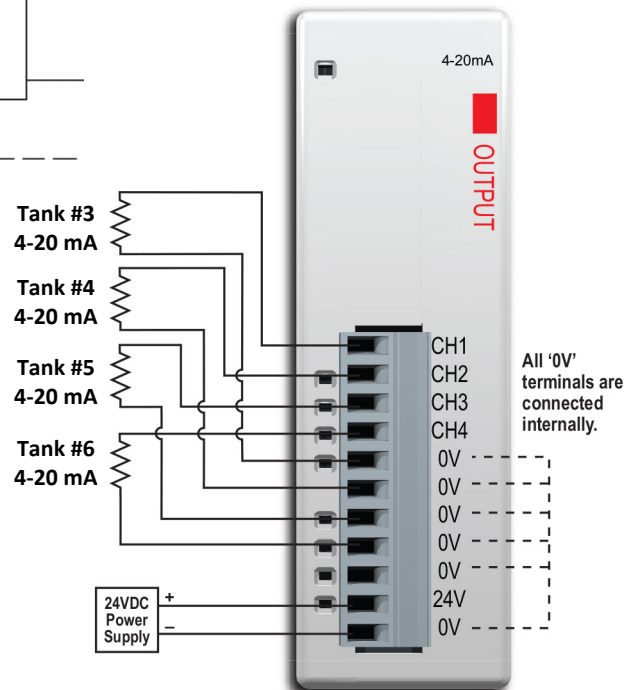
Can use external 18-30VDC power supply or internal 24VDC power supply

IMPORTANT: If using RS-485 please see connection diagram on page 3.

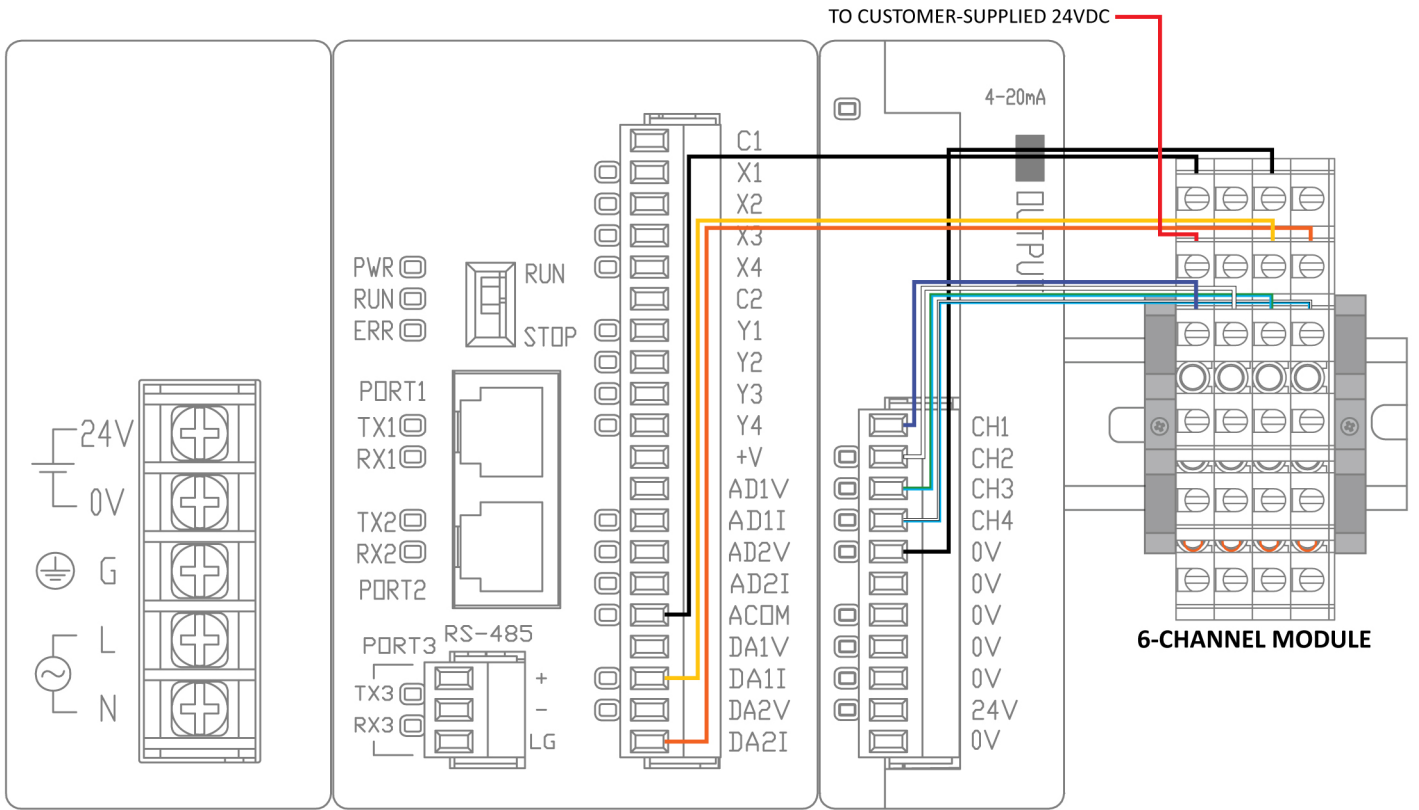
*Loss of signal from PROTEUS to X232-420 will give 20mA output.

*Probe time out will give 20mA output.

Output Range: 4-20mA (Sink)
Load Impedance: 0 - 600 Ω at 24VDC



6-Channel Module Wiring



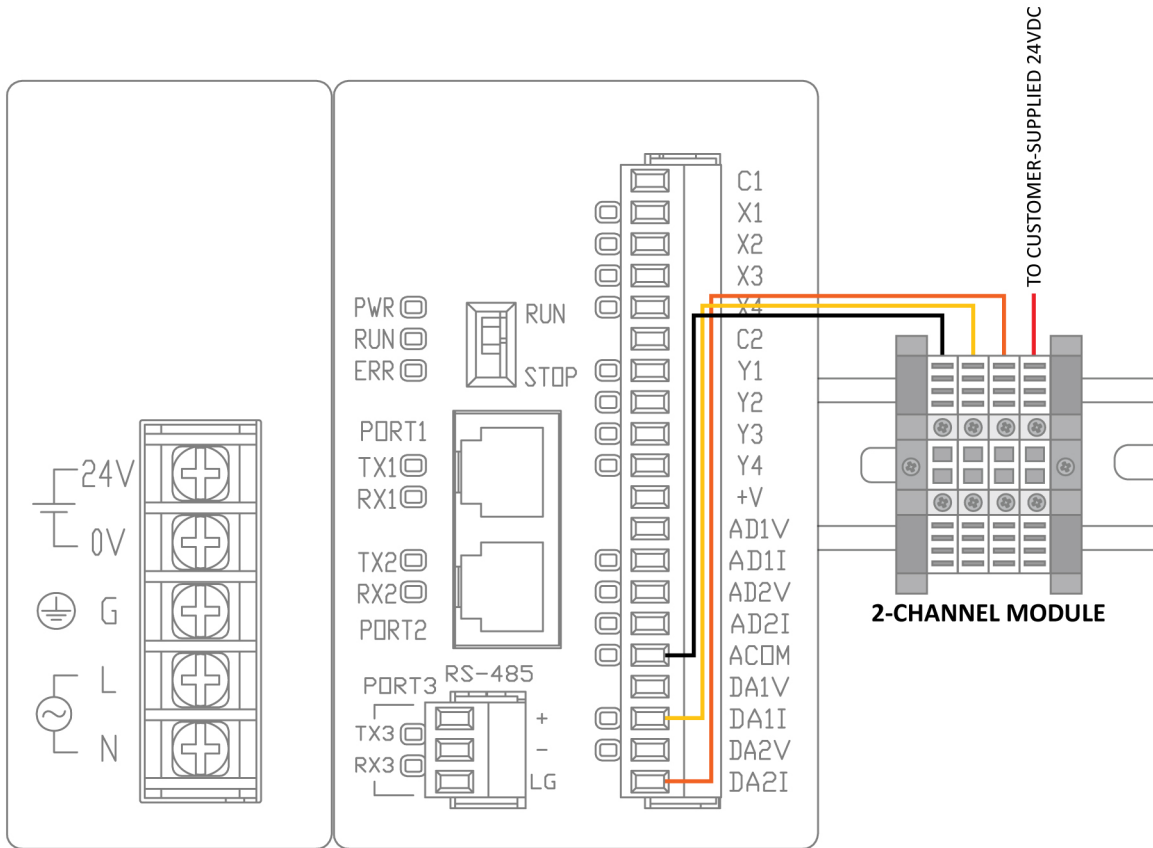
6-Channel Module Wiring (Sink)			
FACTORY WIRED (BLACK WIRE)	FACTORY WIRED (UNUSED)	FACTORY WIRED (BLACK WIRE)	FACTORY WIRED (UNUSED)
PROVIDED BY CUSTOMER (RED WIRE) POWER SUPPLY 24VDC (+)	FACTORY WIRED (UNUSED)	FACTORY WIRED (YELLOW WIRE) TANK 1 (-)	FACTORY WIRED (ORANGE WIRE) TANK 2 (-)
FACTORY WIRED (BLUE WIRE) TANK 3 (+)	FACTORY WIRED (WHITE WIRE) TANK 4 (+)	FACTORY WIRED (BLUE/GREEN WIRE) TANK 5 (+)	FACTORY WIRED (WHITE/BLUE WIRE) TANK 6 (+)
TANK 3 (+)	TANK 4 (+)	TANK 5 (+)	TANK 6 (+)
TANK 1 4-20mA (+)	↓ JUMPER	TANK 2 4-20mA (+)	TANK 1 4-20mA (-)
TANK 2 4-20mA (-)	TANK 3 to TANK 6 4-20mA (-)	↓ JUMPER	TANK 2 4-20mA (-)
24VDC (-)	↓ JUMPER	TANK 3 to TANK 6 4-20mA (-)	TANK 3 to TANK 6 4-20mA (-)

IMPORTANT: SHADED CELLS (INPUTS) SHOULD NOT BE UNDONE OR CHANGED.



Note: These jumpers are already pre-installed.

2-Channel Module Wiring



2-Channel Module Wiring (Sink)			
FACTORY WIRED (BLACK WIRE)	FACTORY WIRED (YELLOW WIRE)	FACTORY WIRED (ORANGE WIRE)	PROVIDED BY CUSTOMER (RED WIRE)
POWER SUPPLY 24VDC (-)	TANK 1 (-)	TANK 2 (-)	POWER SUPPLY 24VDC (+)
POWER SUPPLY 24VDC (-) (PROVIDED BY CUSTOMER)	TANK 1 (-)	TANK 2 (-)	TANK 1 & 2 (+) and POWER SUPPLY 24VDC (+) (PROVIDED BY CUSTOMER)

IMPORTANT: SHADED CELLS (INPUTS) SHOULD NOT BE UNDONE OR CHANGED.