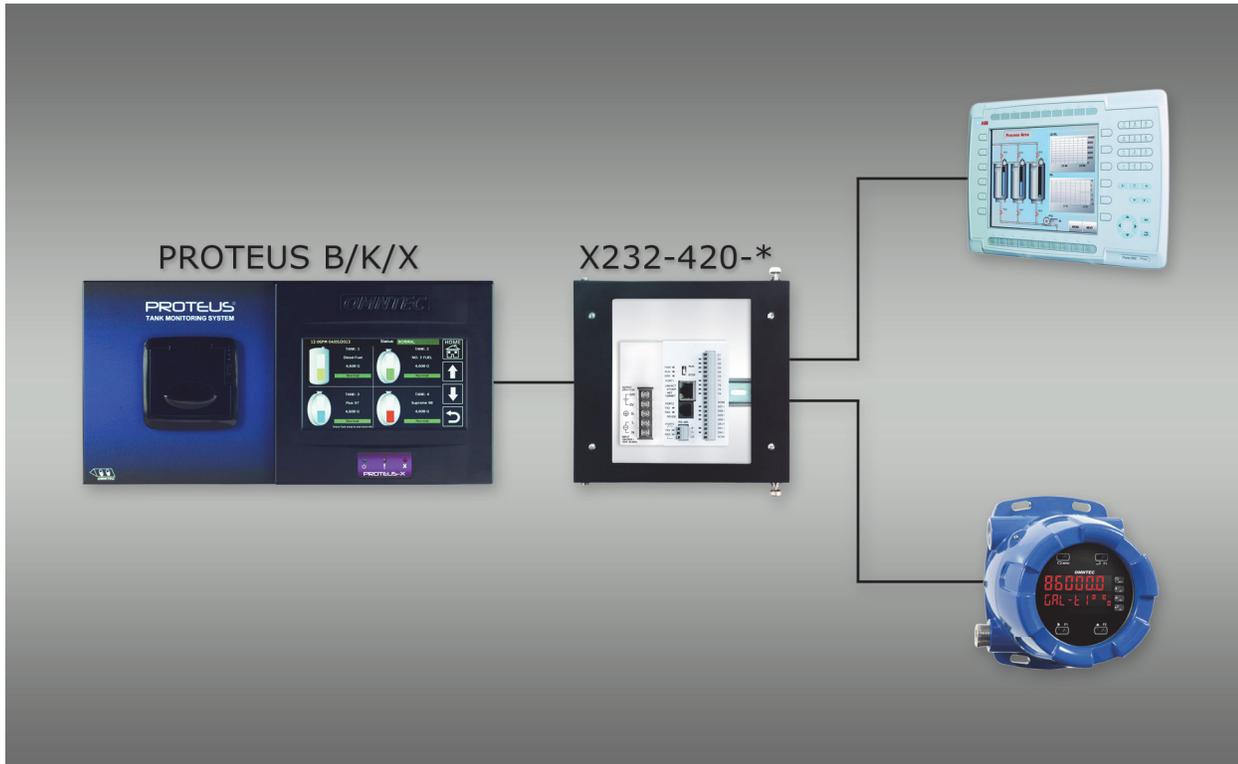




PROTEUS® 4 to 20 mA Interface Module Sink Version

Part Number: X232-420-2
X232-420-4
X232-420-6
X232-420-10



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.

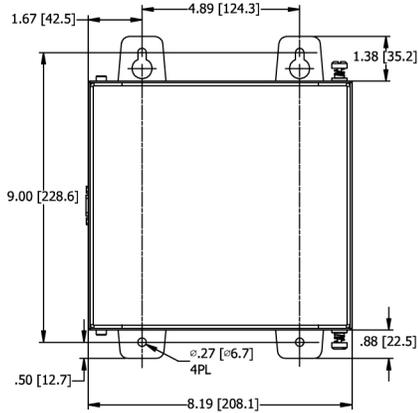
*** Contact manufacturer for relay programming options.

**** Contact manufacturer - additional relays available

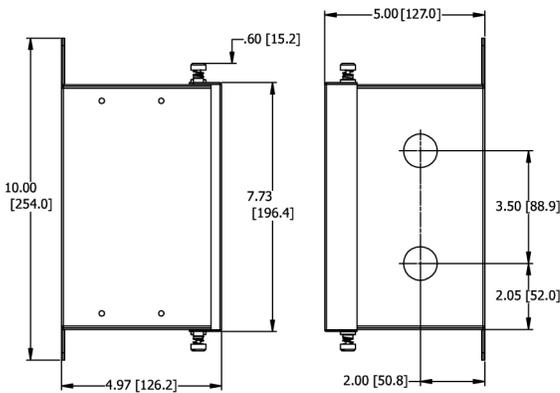
4 to 20 mA Interface Module

Part No. X232-420-2 / X232-420-4 / X232-420-6 / X232-420-10

(Sink Version)

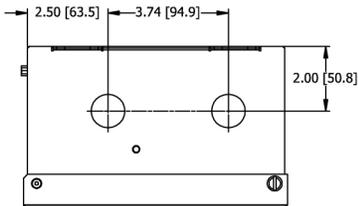


FRONT VIEW

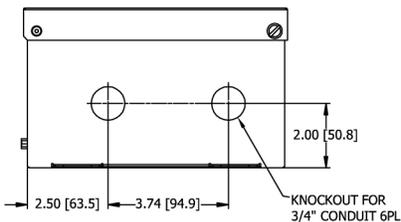


LEFT VIEW

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.

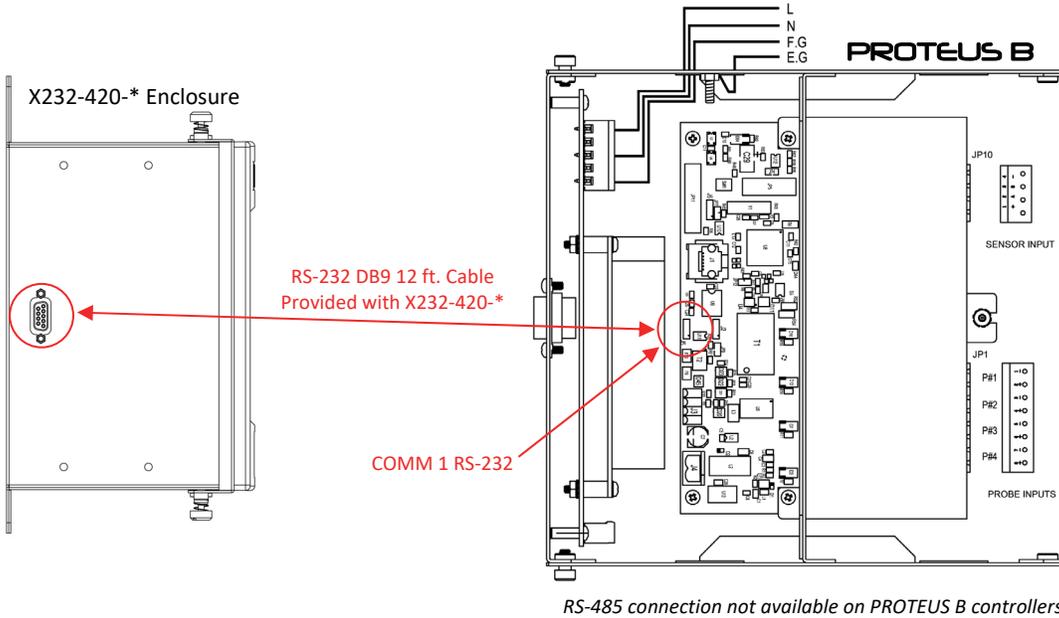
4 to 20 mA Interface Module

Part No. X232-420-2 / X232-420-4 / X232-420-6 / X232-420-10

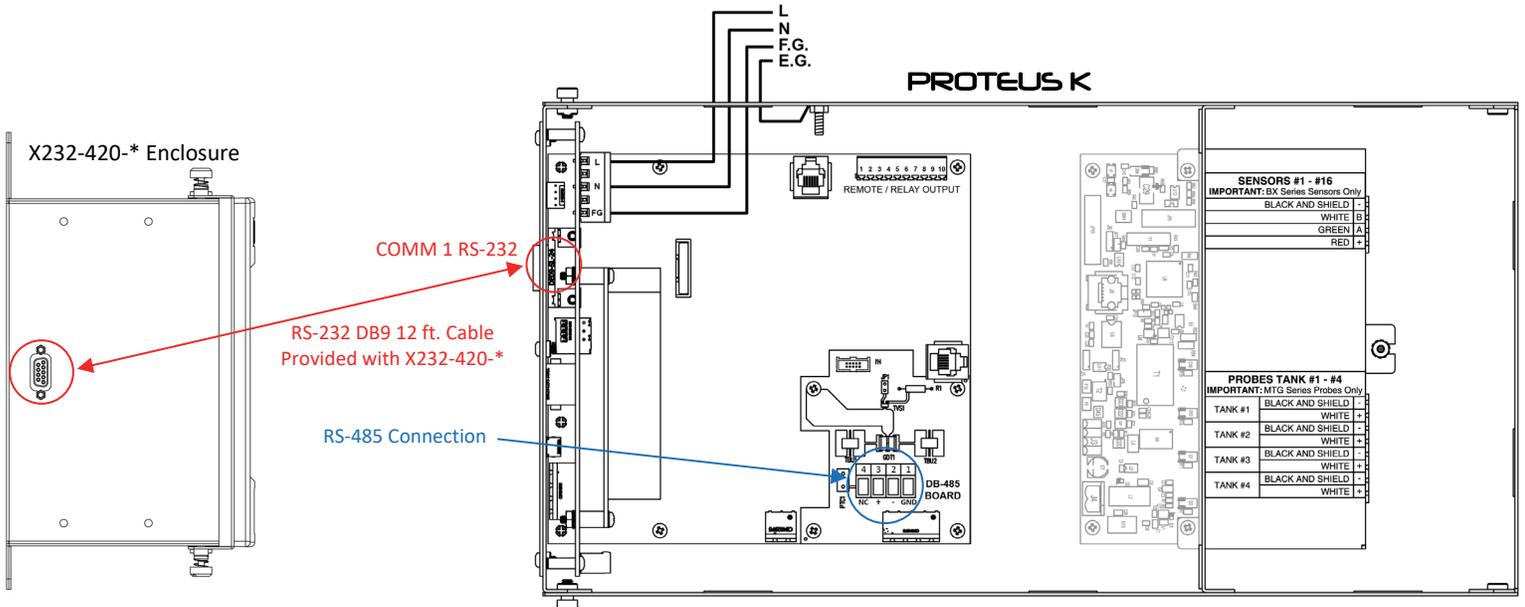
(Sink Version)

- 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.

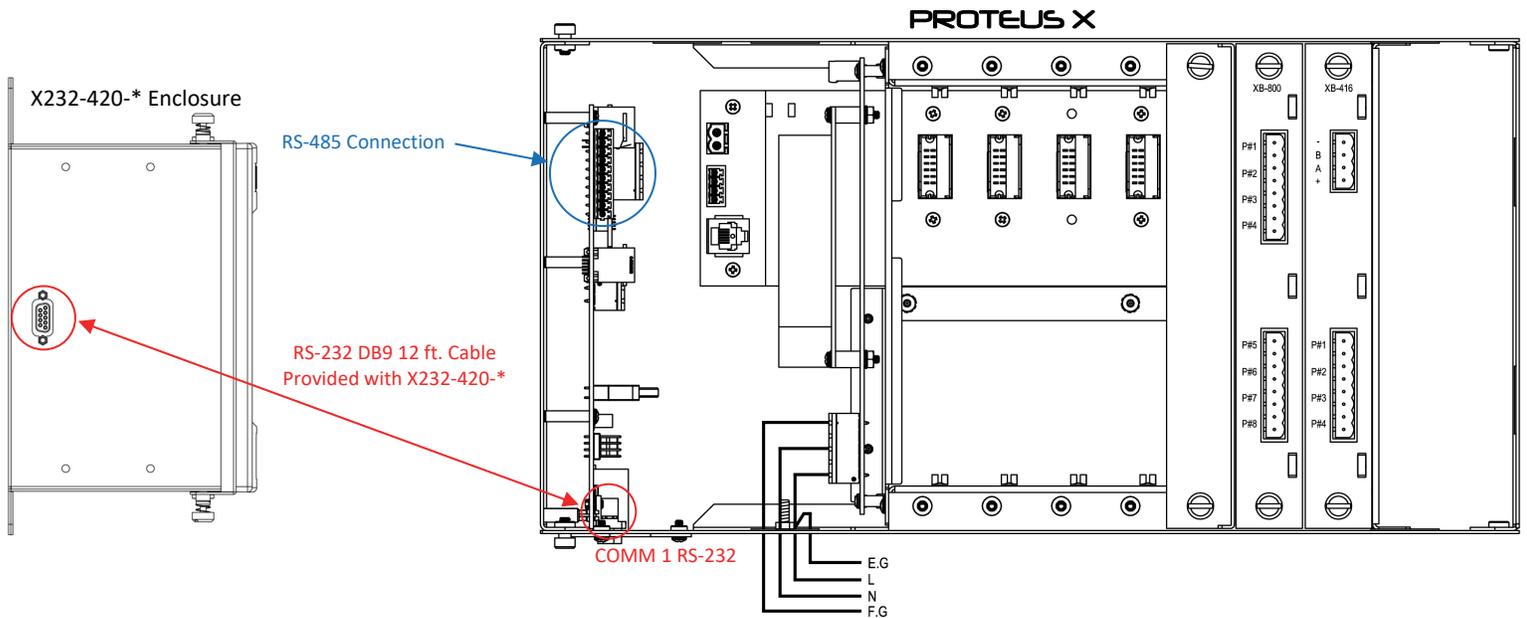
RS-232 DB9 Cable between X232-420-* and PROTEUS-B Controller



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

RS-485 Connection

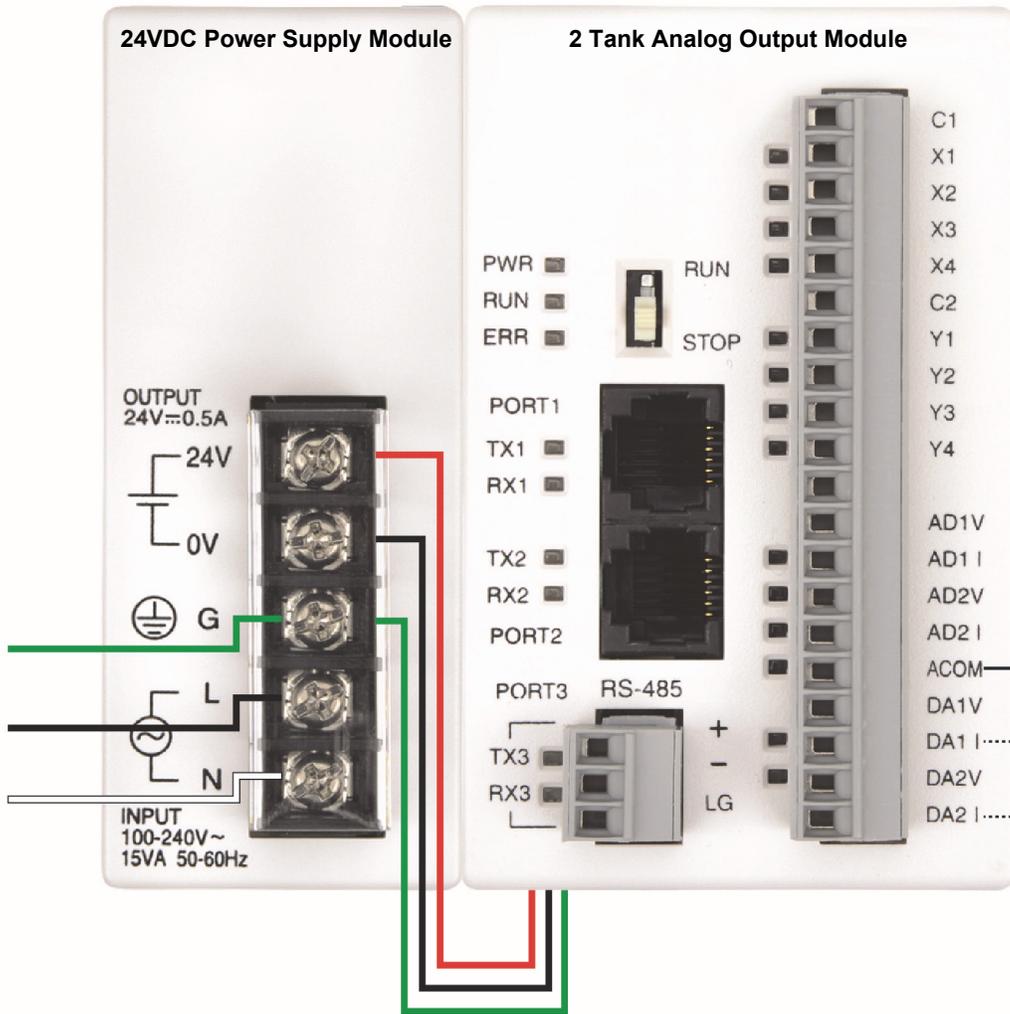
PLC PORTS			PROTEUS DB-485 WIRING		
1	+	RED	1	GND	BLACK
2	-	WHITE	2	-	WHITE
3	LG	BLACK	3	+	RED
			4	N/C	N/C

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 to 20 mA Interface Module

Part No. X232-420-2 / X232-420-4 / X232-420-6 / X232-420-10

(Sink Version)

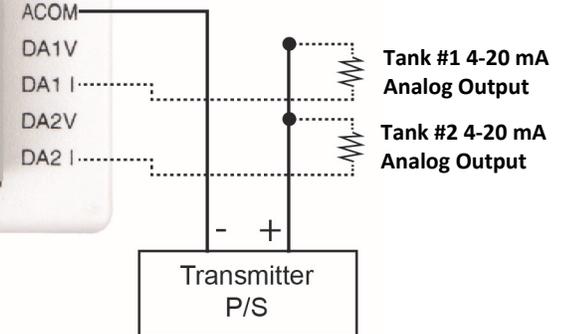


Terminal	Connection
ACOM	Power Supply (-)
*DA1I	Tank #1 4-20 mA(+)
*DA2I	Tank # 2 4-20 mA(+)

Color	Terminal
Red	(+)
Black	(-)
Green	GND

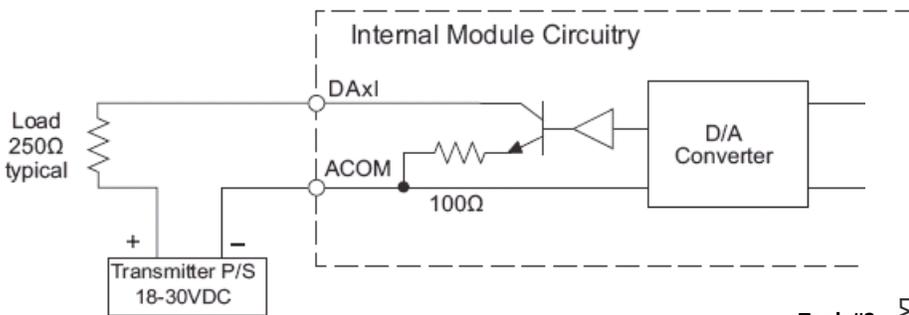
Load Impedance: DC24V: 900 Ω maximum

Wiring Diagram



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

Analog Current Output Circuit



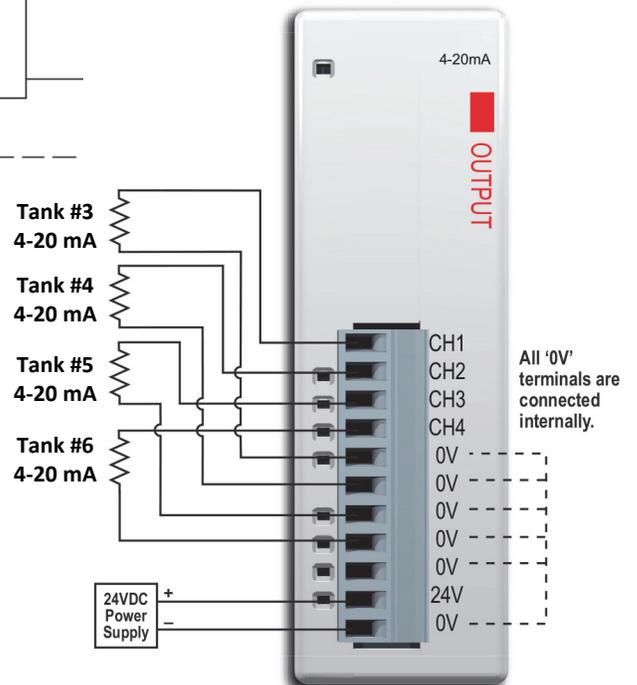
Can use external 18-30VDC power supply or internal 24VDC power supply

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

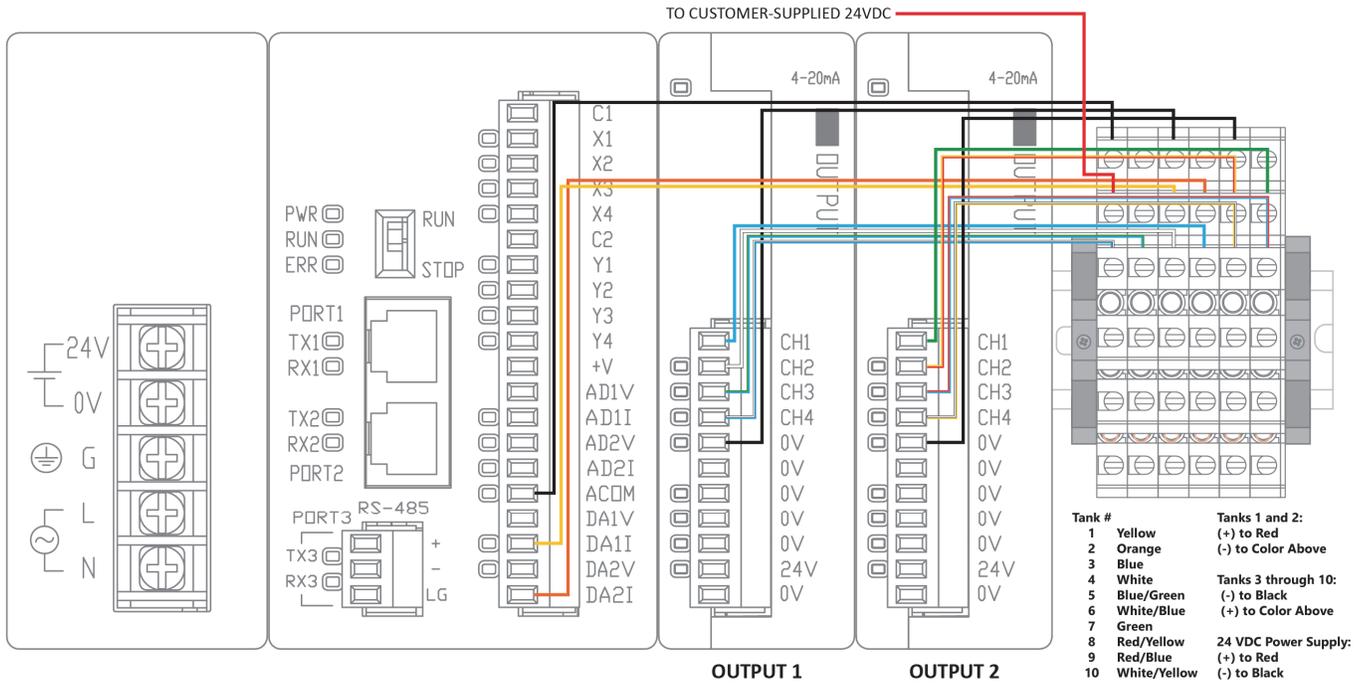


4 to 20 mA Interface Module

Part No. X232-420-2 / X232-420-4 / X232-420-6 / X232-420-10

(Sink Version)

10-Channel Module Wiring



10-Channel Module Wiring (Sink)								
FACTORY WIRED BLACK WIRE	(UNUSED)	FACTORY WIRED BLACK WIRE	(UNUSED)	FACTORY WIRED BLACK WIRE	(UNUSED)			
PROVIDED BY CUSTOMER RED WIRE	(UNUSED)	FACTORY WIRED YELLOW WIRE	FACTORY WIRED ORANGE WIRE	FACTORY WIRED RED/YELLOW WIRE	FACTORY WIRED GREEN WIRE			
POWER SUPPLY		TANK 1 (-)	TANK 2 (-)	TANK 8 (+)	TANK 7 (+)			
FACTORY WIRED WHITE/BLUE WIRE	FACTORY WIRED GREEN/BLUE WIRE	FACTORY WIRED WHITE WIRE	FACTORY WIRED BLUE WIRE	FACTORY WIRED WHITE/YELLOW WIRE	FACTORY WIRED RED/BLUE WIRE			
TANK 6 (+)	TANK 5 (+)	TANK 4 (+)	TANK 3 (+)	TANK 10 (+)	TANK 9 (+)			
TANK 6 (+)	TANK 5 (+)	TANK 4 (+)	TANK 3 (+)	TANK 10 (+)	TANK 9 (+)			
TANK 1 4-20mA (+)	JUMPER	TANK 2 4-20mA (+)	TANK 1 4-20mA (-)	TANK 2 4-20mA (-)	TANK 8 (+)	TANK 7 (+)		
24VDC (-)	JUMPER	24VDC (-)	TANK 3 to TANK 6 4-20mA (-)	JUMPER	TANK 3 to TANK 6 4-20mA (-)	TANK 7 to TANK 10 4-20mA (-)	JUMPER	TANK 7 to TANK 10 4-20mA (-)

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



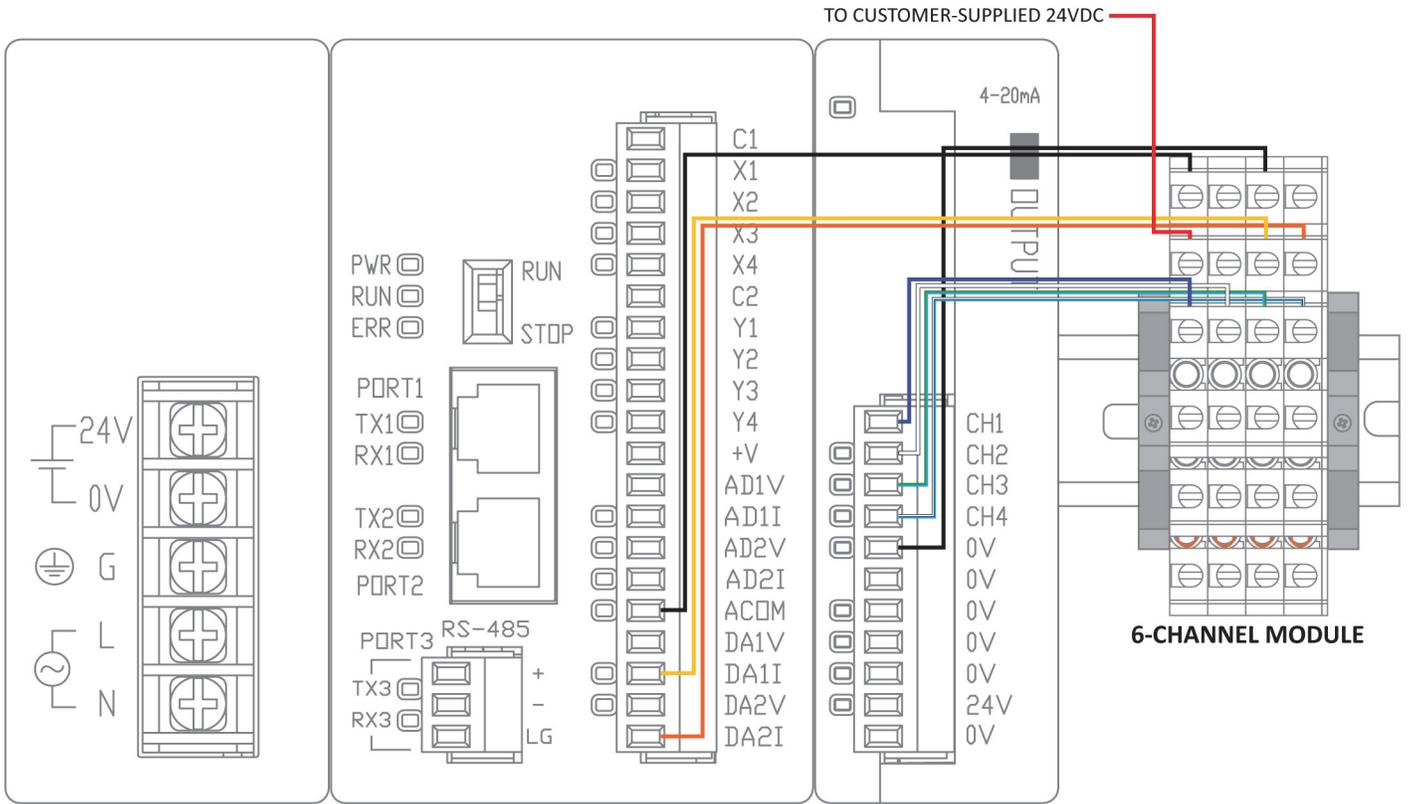
Note: These jumpers are already pre-installed.

4 to 20 mA Interface Module

Part No. X232-420-2 / X232-420-4 / X232-420-6 / X232-420-10

(Sink Version)

6-Channel Module Wiring



6-Channel Module Wiring (Sink)

FACTORY WIRED BLACK WIRE	(UNUSED)	FACTORY WIRED BLACK WIRE	(UNUSED)
PROVIDED BY CUSTOMER RED WIRE POWER SUPPLY 24VDC (+)	(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 (-)
24VDC (-)	JUMPER	24VDC (-)	TANK 3 to TANK 6 4-20mA (-)
		JUMPER	TANK 3 to TANK 6 4-20mA (-)

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



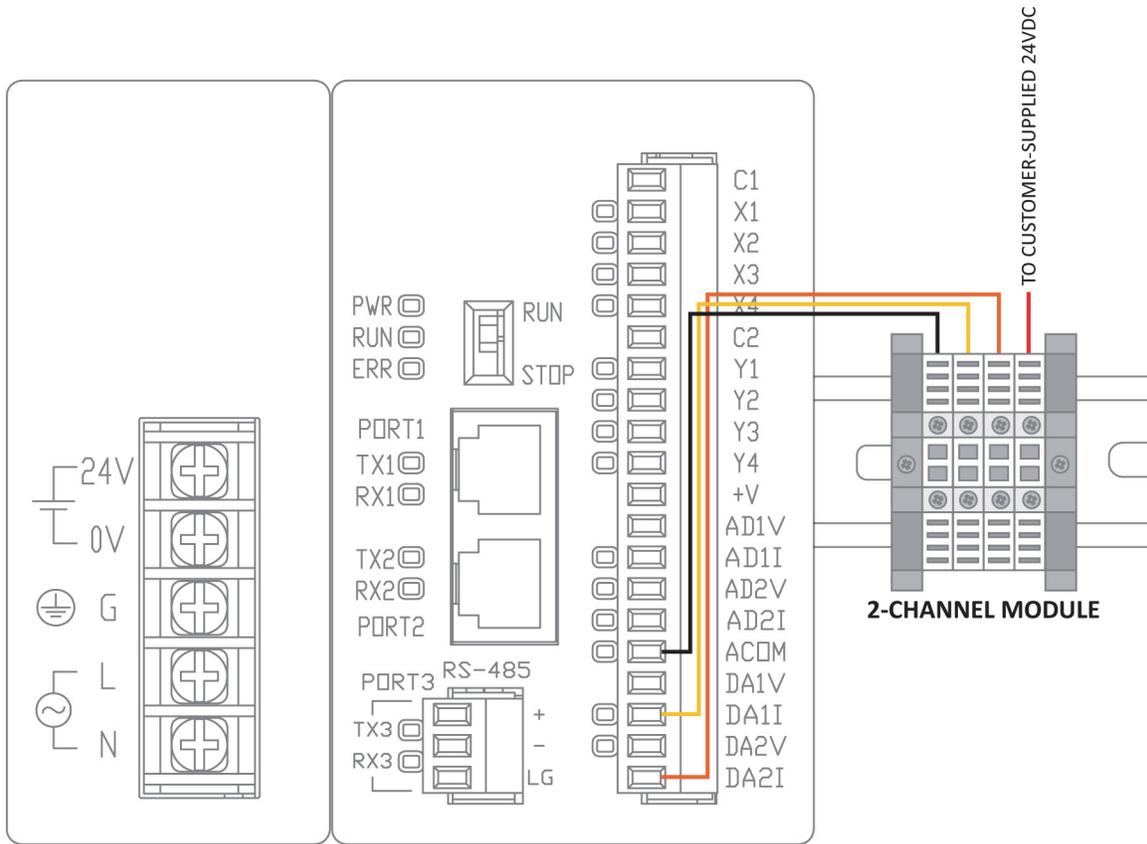
Note: These jumpers are already pre-installed.

4 to 20 mA Interface Module

Part No. X232-420-2 / X232-420-4 / X232-420-6 / X232-420-10

(Sink Version)

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.

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