

Sure Cross[®] Class I, Division 2/Zone 2 Control Drawings

Instruction Manual

Original Instructions
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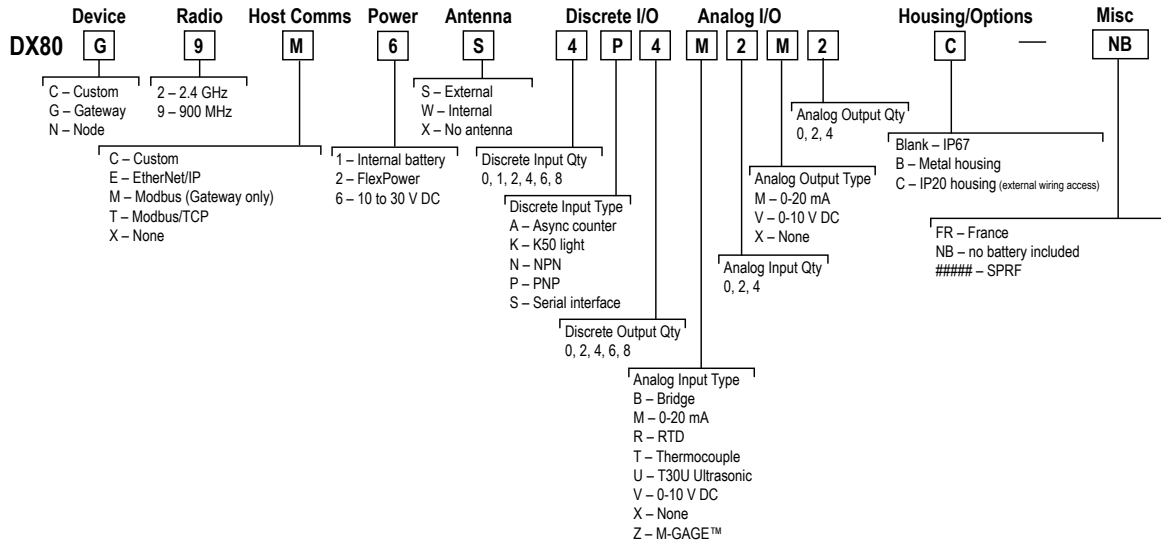
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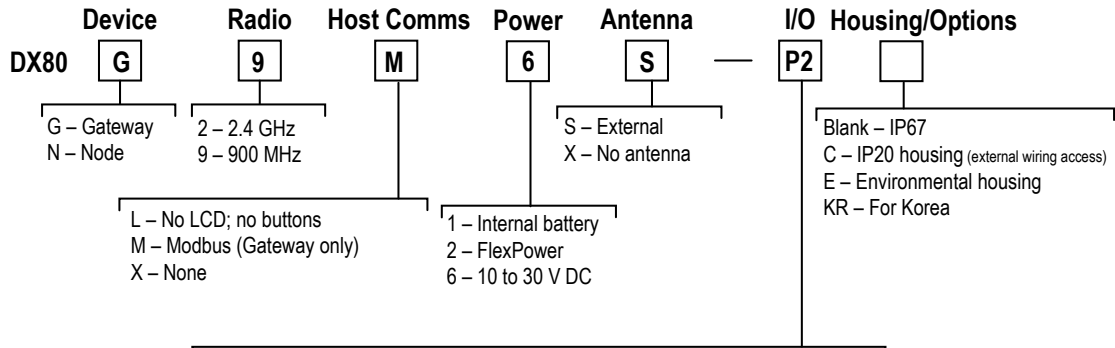
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1 DX80 Models

1.1 Class I, Division 2 DX80 Gateway and Node Models



1.2 Class I, Division 2 Performance Models



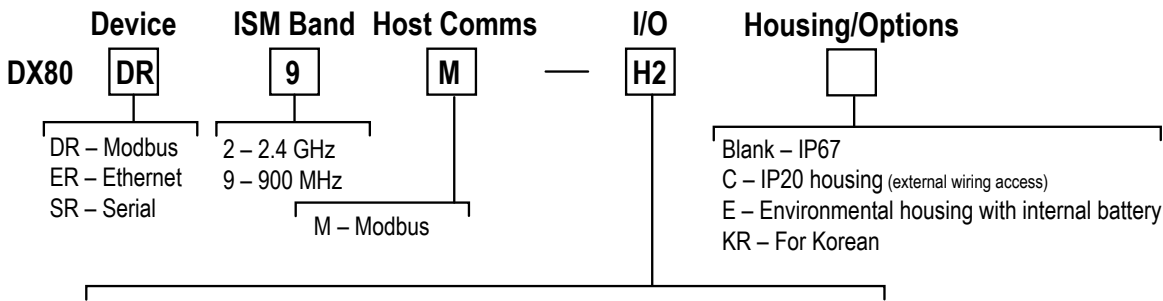
- P – Serial RS485/RS232
- P1 – FlexPower, 2 Discrete IN, 2 Discrete OUT, 2 Analog IN, Boost Voltage
- P2 – 4 Discrete IN, 4 Discrete OUT, 2 Analog IN, 2 Analog OUT
- P3 – FlexPower, Thermocouple
- P4 – FlexPower, RTD
- P5 – FlexPower, 2 Disc IN, 2 Disc OUT, 4 Analog IN
- P6 – Serial interface
- P7 – FlexPower, 12 NPN Discrete IO
- P8 – 12 PNP Discrete IO
- P12 – FlexPower, SDI-12, Bridge, Counter, Disc, Analog

- PM2 – Pre-mapped, 4 Discrete OUT, 2 Analog IN, 2 Analog OUT
- PM8 – Pre-mapped, 12 Discrete IO
- PM8L – Pre-mapped, 12 Discrete IO, No LCD
- PB1 – Board Module, FlexPower, 2 Discrete IN, 2 Discrete OUT, 2 Analog IN
- PB2 – Board Module, 2 Discrete IN, 2 Discrete OUT, 2 Analog IN, 2 Analog OUT

Not all model combinations are available.

Models listed with an L (Housing/Option) are basic units that may not include all listed options in the I/O column.

1.3 Class I, Division 2 MultiHop Models

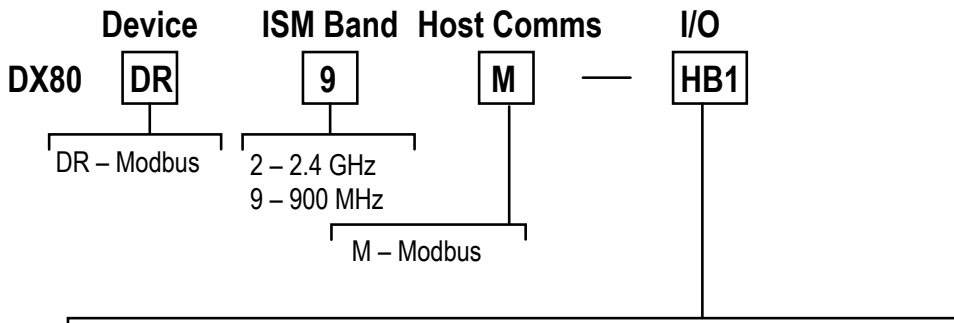


- H – No I/O
- H1 – FlexPower, 4 Disc IN, 2 Disc OUT, 4 Analog IN, 1 thermistor IN, 1 Counter IN
- H2 – 4 Disc IN, 4 Disc OUT, 2 Analog IN, 2 Analog OUT
- H3 – FlexPower, Thermocouple
- H4 – FlexPower, RTD
- H5 – FlexPower, 4 Disc IN, 2 Disc OUT, 4 Analog IN
- H6 – Serial interface
- H7 – FlexPower 12 NPN Discrete I/O
- H8 – 12 PNP Discrete I/O
- H12 – FlexPower, SDI-12, Bridge, Counter, Disc, Analog

Not all model combinations are available.

Models listed with an L under Housing/Options are basic models that may not include all I/O options.

1.4 Class I, Division 2 MultiHop Board Models



- HB1 – FlexPower board module, 2 Disc IN, 2 Disc OUT, 2 Analog IN
- HB2 – Board module, 2 Disc IN, 2 Disc OUT, 2 Analog IN, 2 Analog OUT

1.5 Accessories for Class I, Division 2 Models

Model	Description
DX81-LITH	DX81 FlexPower Battery Supply, Lithium Batteries
M12FTH3Q	Temperature and Relative Humidity Sensor, Modbus Slave
M12FTH4Q	Temperature and Relative Humidity Sensor, 1-Wire Serial

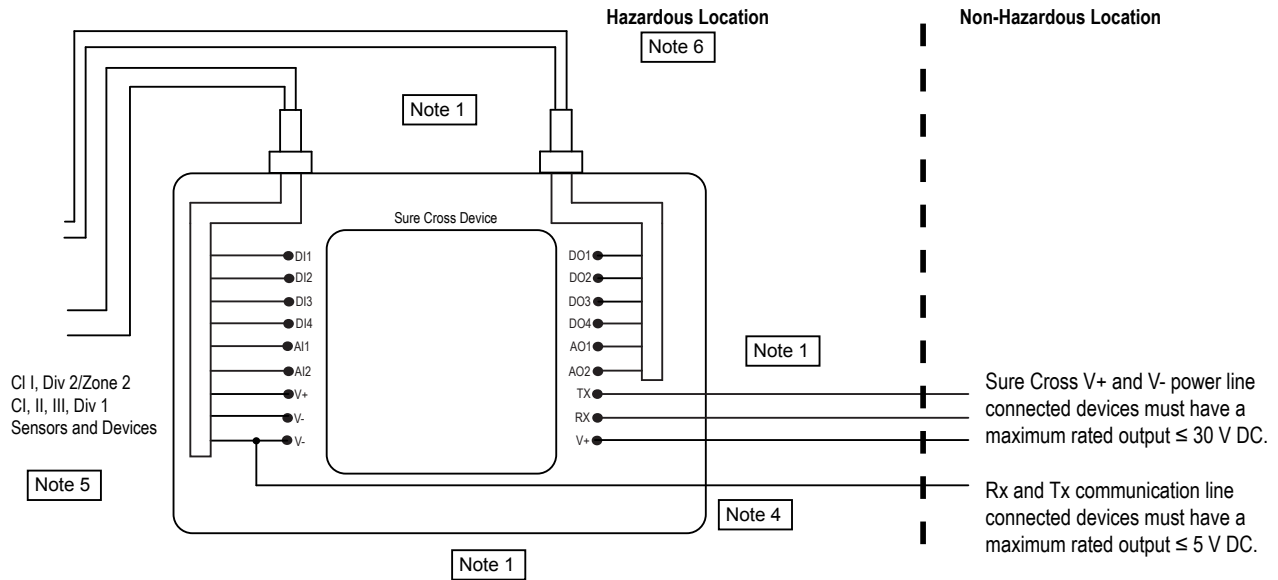
2 Control Drawing Notes

Note	Description
1	Sure Cross® Class I, Division 2 control modules must be installed in a suitable enclosure acceptable to the local inspection authority having jurisdiction. The enclosure must have provision for Class I, Division 2/Zone 2 wiring method in accordance with the Canadian Electrical Code (CEC) for Canada and the National Electrical Code (NEC) for the United States.
2	This equipment is suitable for use in Class I, Division 2/Zone 2, groups (as applicable) or non-hazardous locations only.
3	Warning - Explosion Hazard - Substitution of components may impair suitability for Class I, Division 2/Zone 2.
4	Warning - Explosion Hazard - Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
5	The field circuits are not limited energy. Field devices must therefore be certified for installation in Class I, Division 2/Zone 2 hazardous locations and use Division 2/Zone 2 wiring methods in accordance with Note 1. Field circuits connected to Digital Inputs can draw a maximum of 5 mA from V+/V- per input and must have a maximum rated output < 30 V/V- DC. Field circuits connected to Digital Outputs must have a maximum rated voltage < V+/V- and may consume a maximum current < 100 mA per output. Field circuits connected to Analog Inputs can draw a maximum of 20 mA per input. Field circuits connected to Analog Outputs must have a maximum rated voltage < V+/V- and may consume a maximum current < 20 mA per outputs. Ta=80 C maximum.
6	The antenna circuit is non-incendive/energy limited. As such, the antenna may be installed on the outside of the enclosure. Alternatively, it may be installed remote from the enclosure without the need for Class I, Division 2/Zone 2 wiring methods. When installing antennas for the 1 Watt 900 MHz (M-H and -P) devices, do not exceed 3 dB total gain when the antenna is installed in Class I, Division 2/Zone 2 hazardous locations.
7	All DX81 battery modules can only be used with the blue wire (GND) connected to the V- and the gray wire (3.6 V) connected to B+.

3 Wiring Diagrams

3.1 Gateway, Node, P2C Performance, and H2C MultiHop Models

10 to 30 V DC powered DX80 4422 data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.



Refer to [Control Drawing Notes](#) on p. 5.

Class I, Division 2, Group A, B, C, D; Zone 2, Group IIC		
Gateways with IP20 Housings	Nodes with IP20 Housings	MultiHop and Performance Models
DX80G9M6W4P4M2M2C	DX80N9X6W4P4M2M2C	DX80DR9M-H2C
DX80G9M6S4P4M2M2C	DX80N9X6S4P4M2M2C	DX80DR2M-H2C
DX80G2M6W4P4M2M2C	DX80N2X6W4P4M2M2C	DX80G9M6S-P2C
DX80G2M6S4P4M2M2C	DX80N2X6S4P4M2M2C	DX80G2M6S-P2C
DX80G9M6W4P4V2V2C	DX80N9X6W4P4V2V2C	DX80N9X6S-P2C
DX80G9M6S4P4V2V2C	DX80N9X6S4P4V2V2C	DX80N2X6S-P2C
DX80G2M6W4P4V2V2C	DX80N2X6W4P4V2V2C	
DX80G2M6S4P4V2V2C	DX80N2X6S4P4V2V2C	
DX80G2M6S4P4V2V2C-12801 (Custom for Weatherford)		
DX80G2M6S4P4V2V2C-19819 (Custom for Weatherford)		

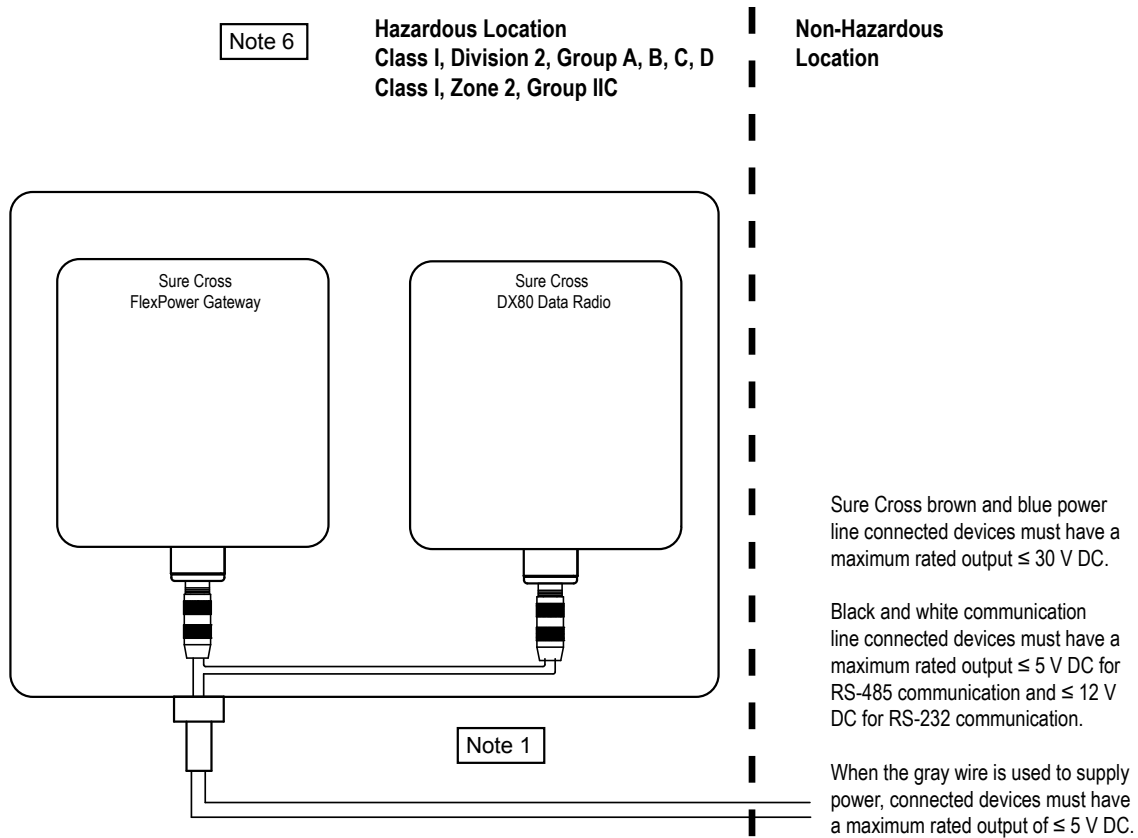
Class I, Division 2, Group A, B, C, D; Class II, Division 1, Group E, F, G; Class III, Division 1; Zone 2 (Group IIC) and 22 (Group IIIC)	
Gateways, Metal Housing *	Nodes, Metal Housing *
DX80G9M6S4P4M2M2B	DX80N9M6S4P4M2M2B
DX80G2M6S4P4M2M2B	DX80N2M6S4P4M2M2B

*Metal Housing Additional Notes

1. Close unused entries with the Type 4X/IP68 plug provided with the apparatus.
2. Wiring method also must be suitable for Class II, Class III (Dust) Hazardous Locations
3. Only Metal Housing DX80 versions are rated for use in Class II, Class III Hazardous Locations.

3.2 FlexPower Gateway and Data Radio

FlexPower (3.6 to 5.5 V DC) powered Gateway, no I/O module for use in Class I, Division 2/Zone 2 Hazardous Locations.
 FlexPower (3.6 to 5.5 V DC) powered Data Radio, no I/O module for use in Class I, Division 2/Zone 2 Hazardous Locations.

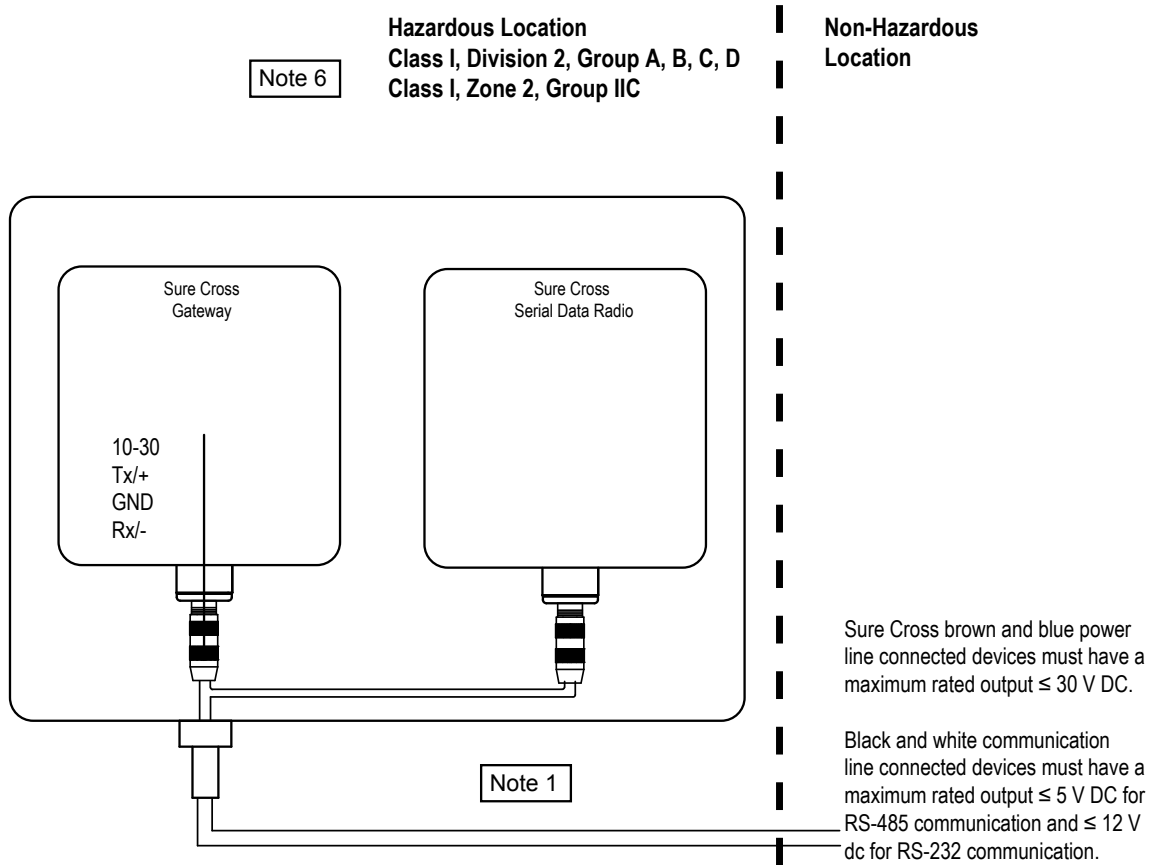


Refer to [Control Drawing Notes](#) on p. 5.

FlexPower Gateways	Data Radios
DX80G9M2S	DX80DR9M
DX80G2M2S	DX80DR2M
DX80G9M2S-P	DX80DR9M-H
DX80G2M2S-P	DX80DR2M-H

3.3 MultiHop Serial Data Radio SR*M-H

Serial Data Radio (10 to 30 V DC), no I/O module for use in Class I, Division 2/Zone 2 Hazardous Locations.

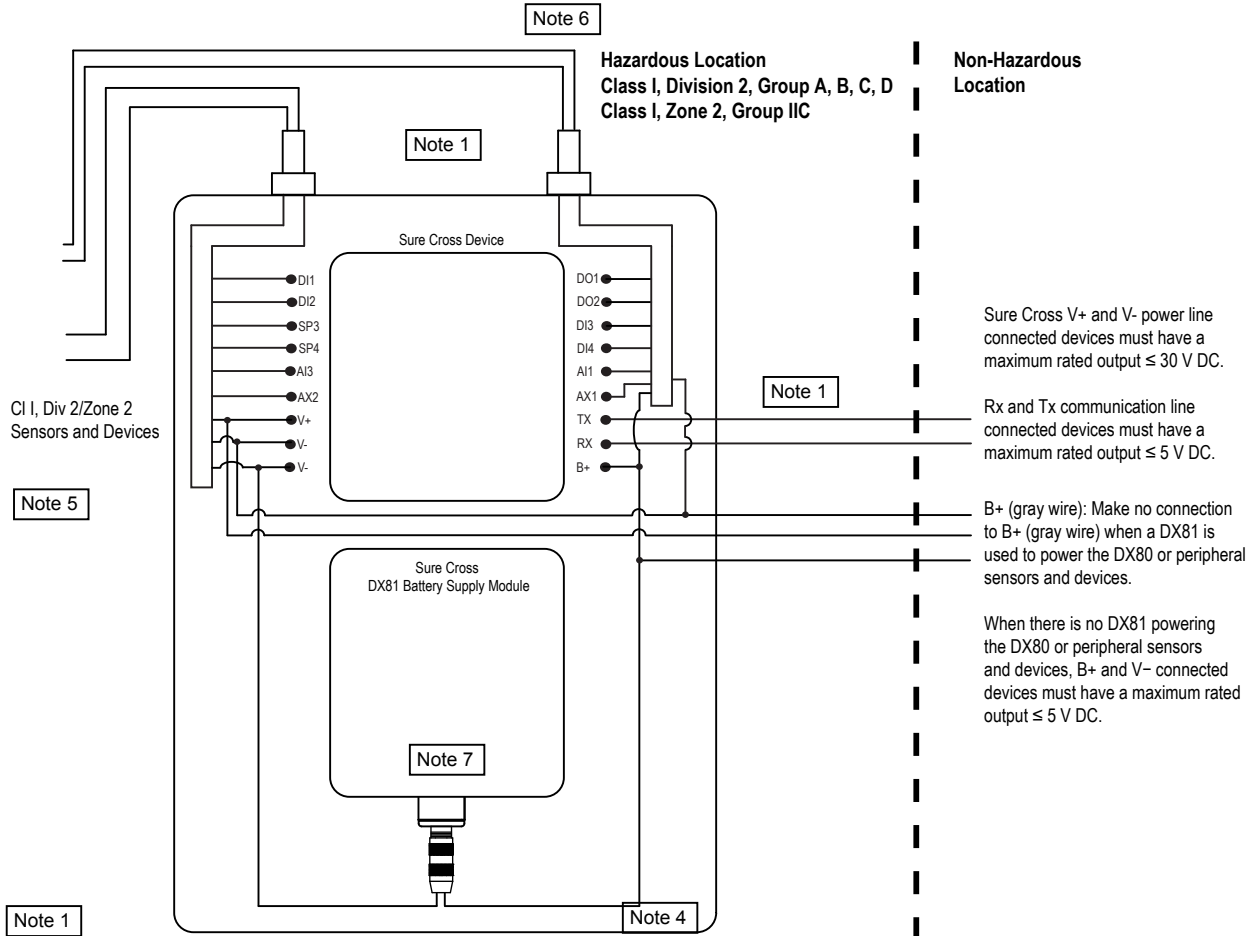


Refer to [Control Drawing Notes](#) on p. 5.

Serial Data Radio	
DX80SR9M-H	
DX80SR2M-H	

3.4 MultiHop H1C Models

FlexPower data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

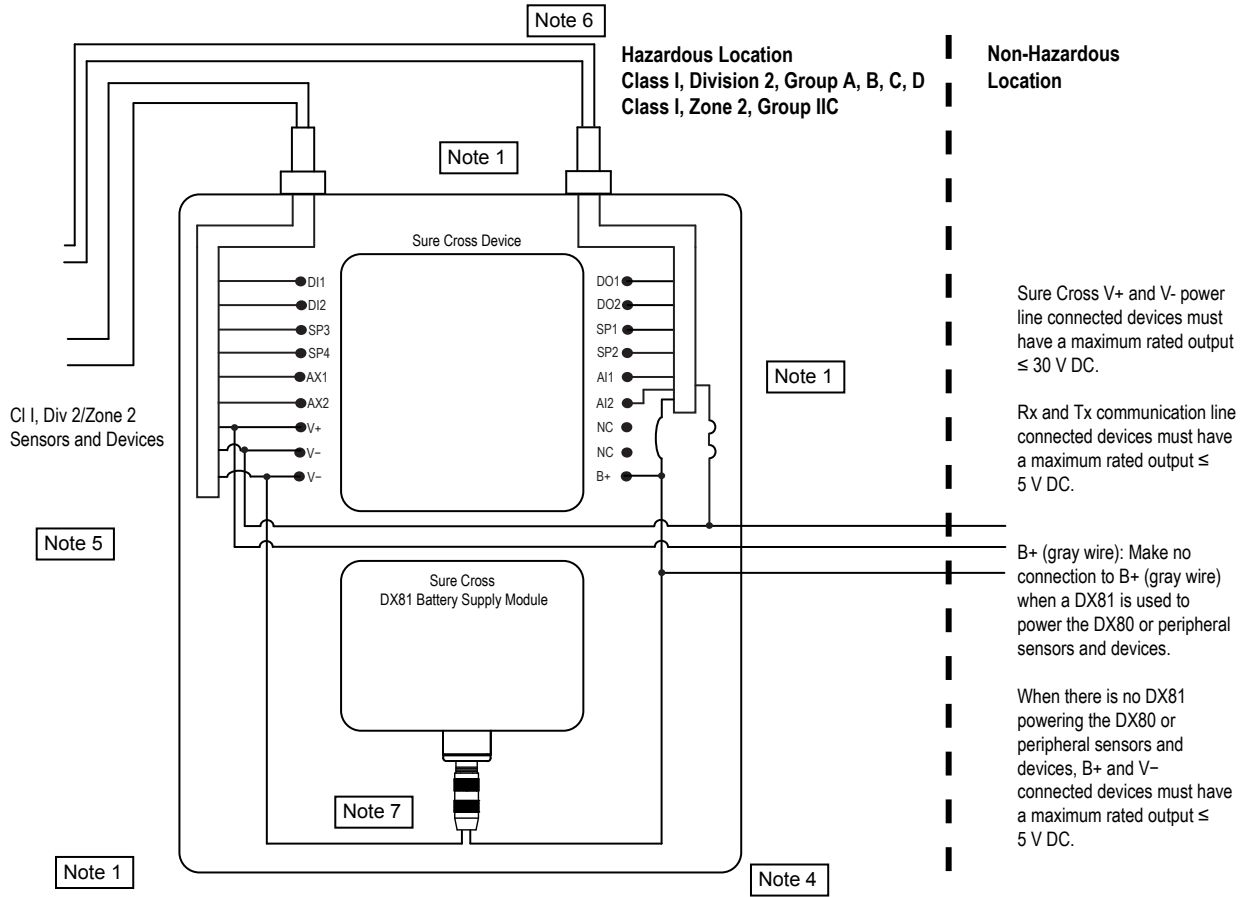


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	DX81 FlexPower Supply Module
DX80DR9M-H1C	DX81-LITH
DX80DR2M-H1C	

3.5 Performance P1C Models

FlexPower data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

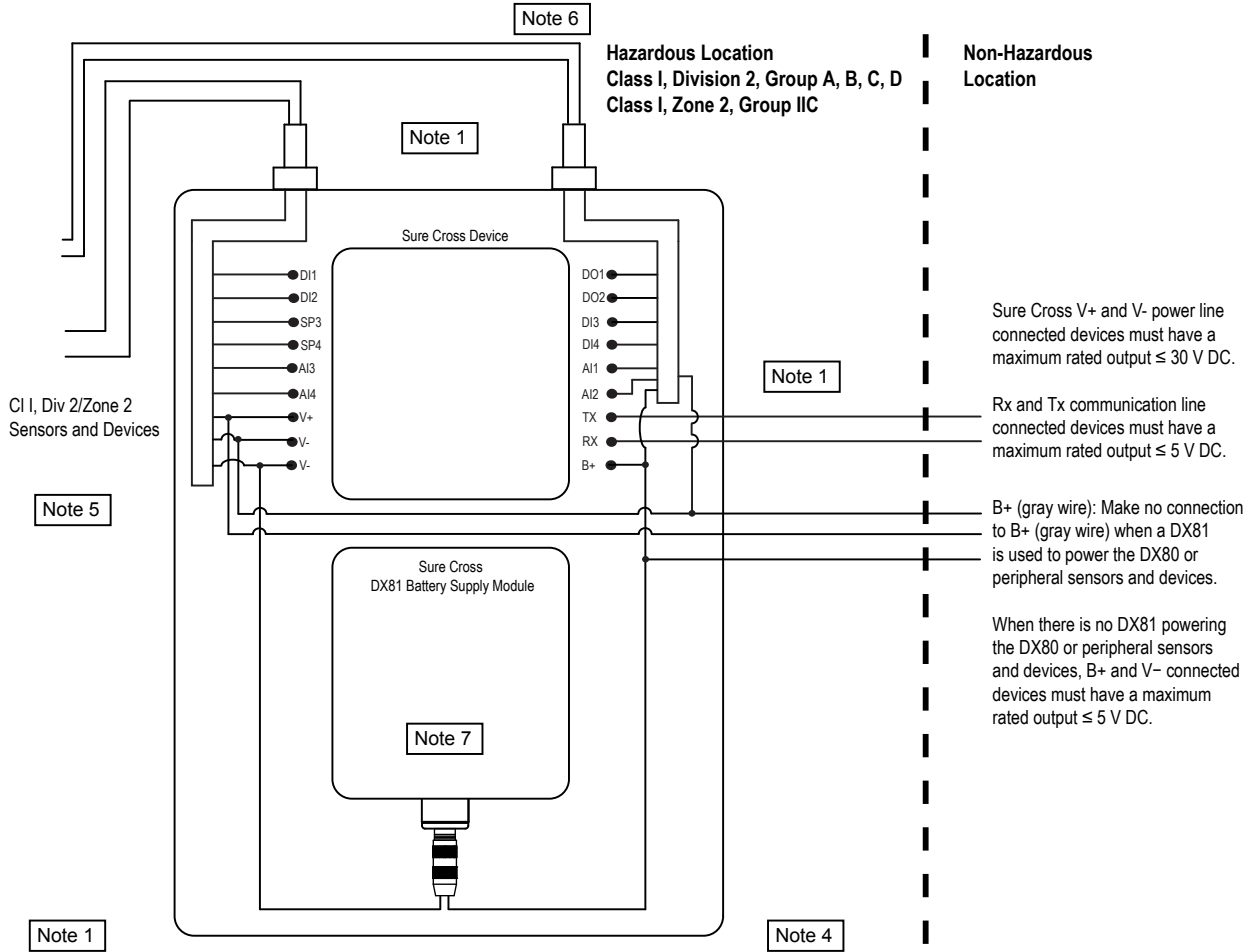


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

Performance Models	DX81 FlexPower Supply Module
DX80N9X2S-P1C	DX81-LITH
DX80N2X2S-P1C	

3.6 MultiHop H5C Models

FlexPower data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

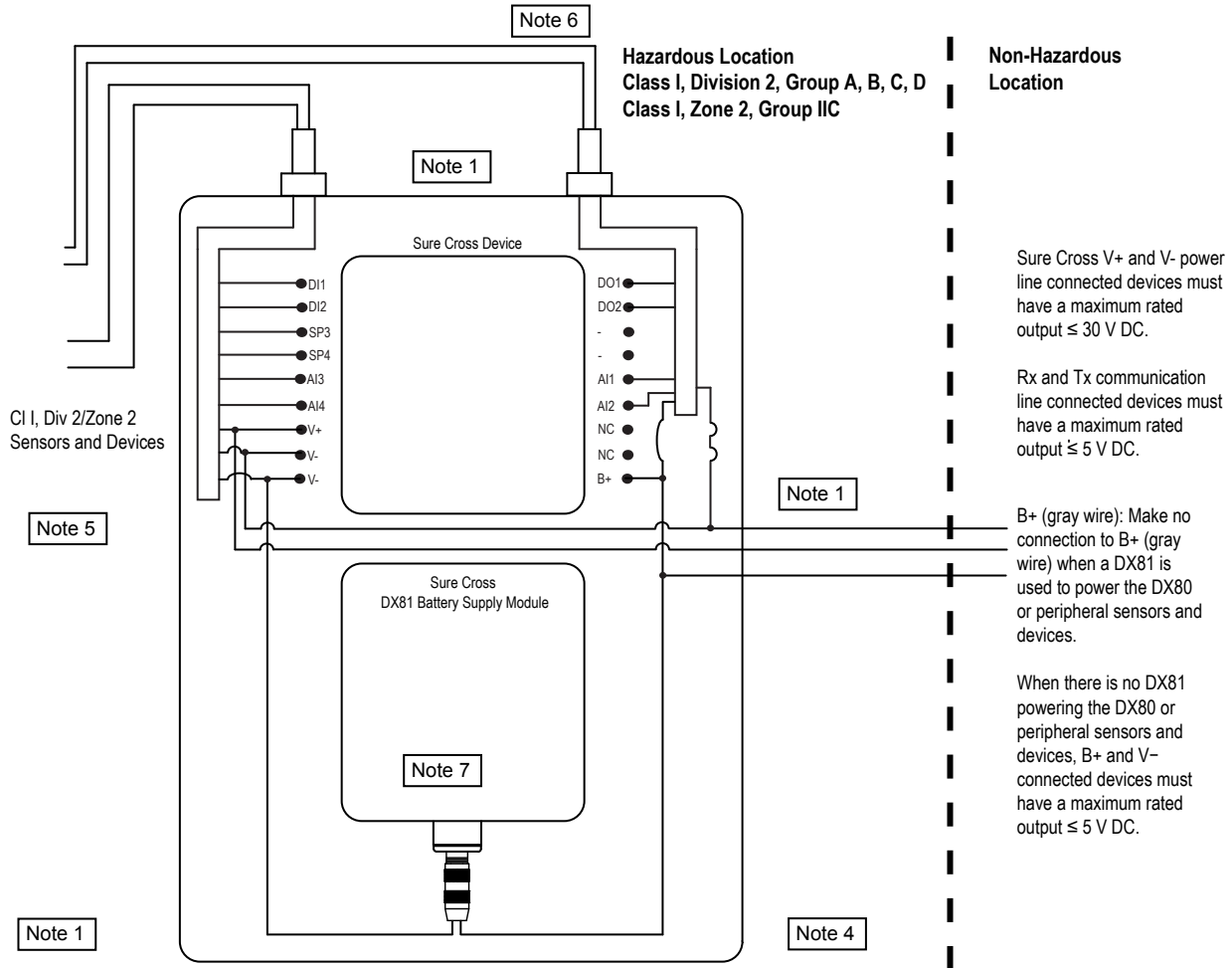


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	DX81 FlexPower Supply Module
DX80DR9M-H5C	DX81-LITH
DX80DR2M-H5C	

3.7 Performance P5C Models

FlexPower data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

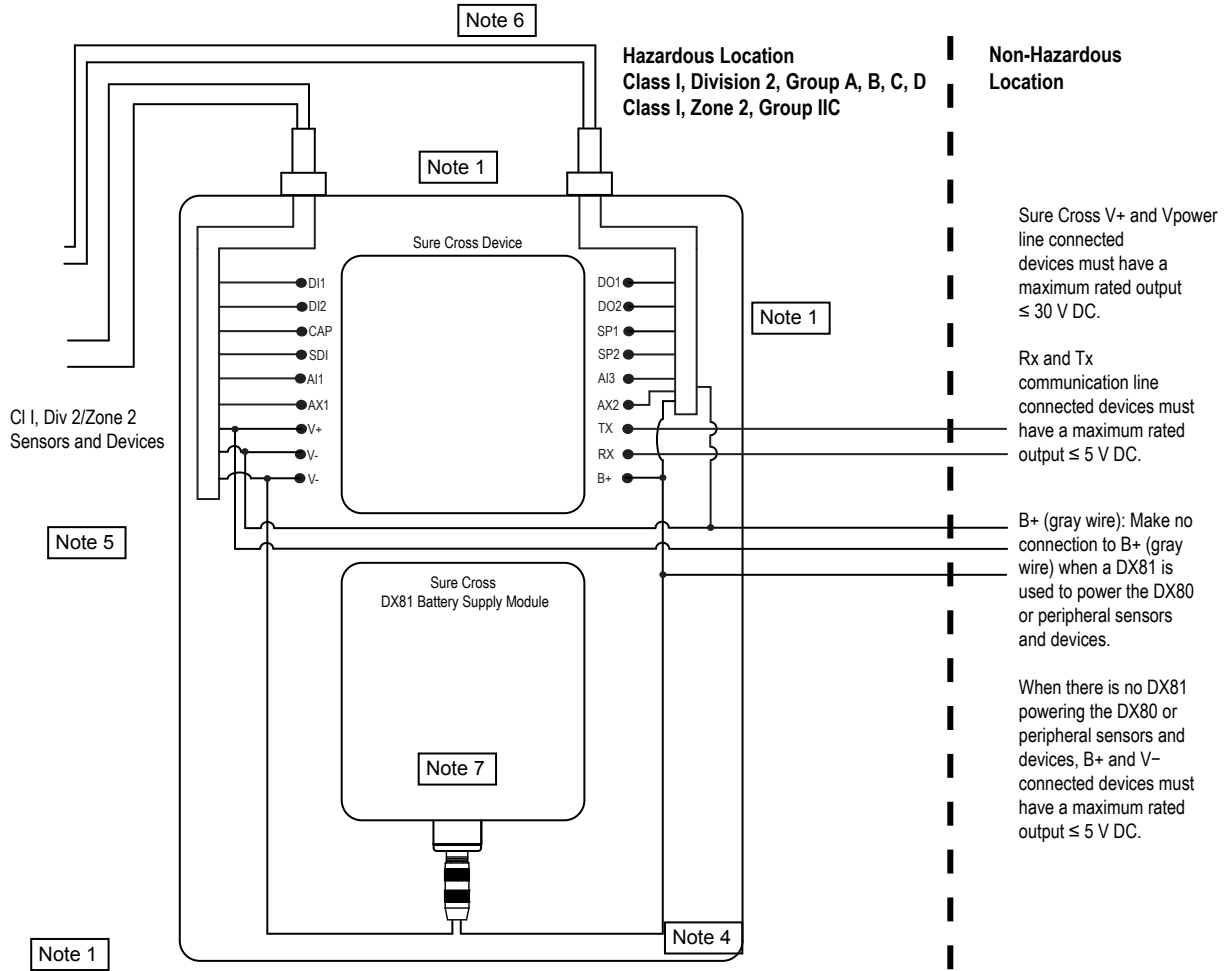


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

Performance Models	DX81 FlexPower Supply Module
DX80N9X2S-P5C	DX81-LITH
DX80N2X2S-P5C	

3.8 MultiHop H12C and Performance P12C Models

FlexPower data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

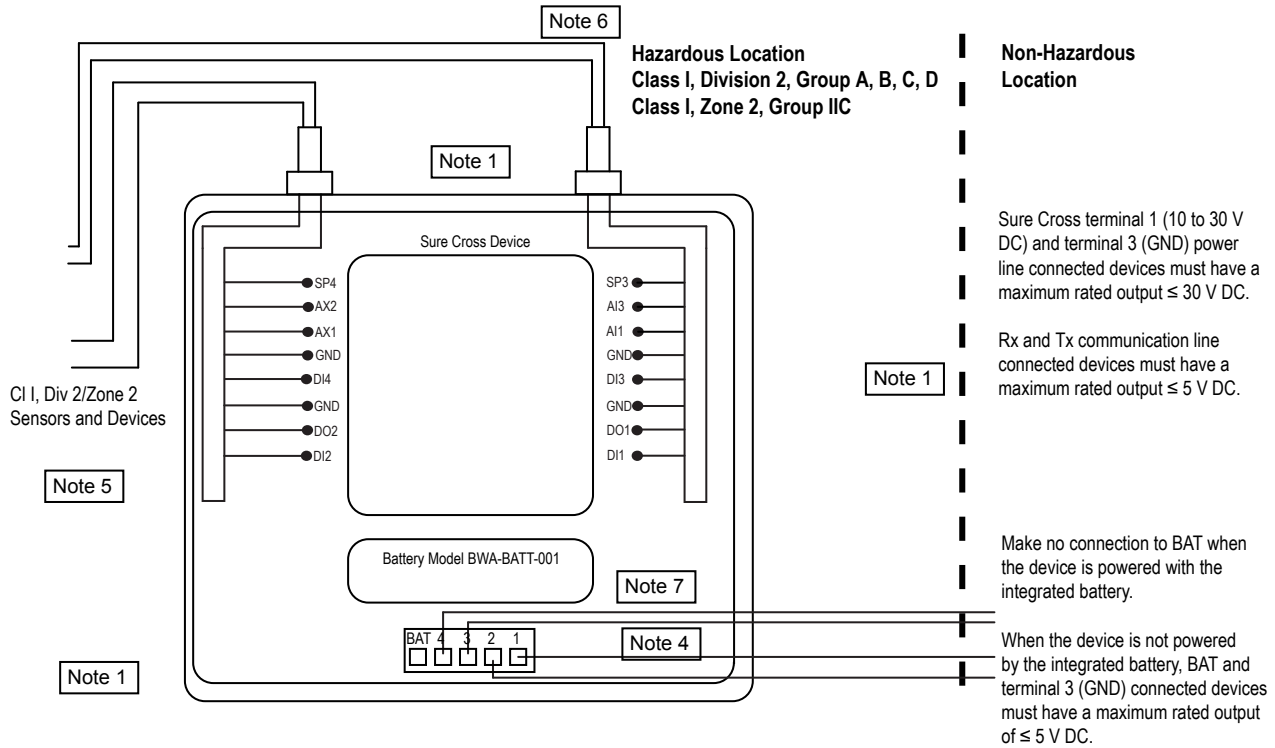


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	Performance Models	DX81 FlexPower Supply Module
DX80DR9M-H12C	DX80N9X2S-P12C	DX81-LITH
DX80DR2M-H12C	DX80N2X2S-P12C	

3.9 MultiHop H1E Models

Battery-powered MultiHop H1E data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

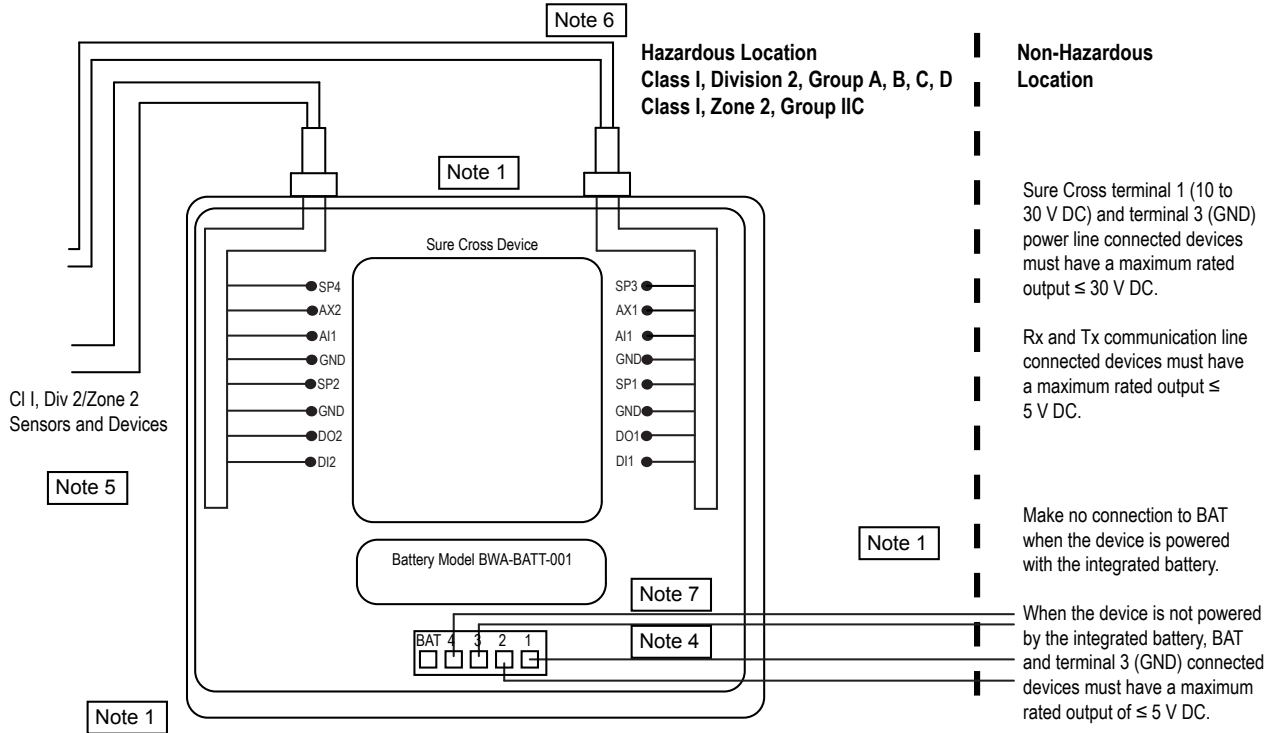


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	
DX80DR9M-H1E	
DX80DR2M-H1E	

3.10 Performance P1E Models

Battery-powered data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.



Sure Cross terminal 1 (10 to 30 V DC) and terminal 3 (GND) power line connected devices must have a maximum rated output ≤ 30 V DC.

Rx and Tx communication line connected devices must have a maximum rated output ≤ 5 V DC.

Make no connection to BAT when the device is powered with the integrated battery.

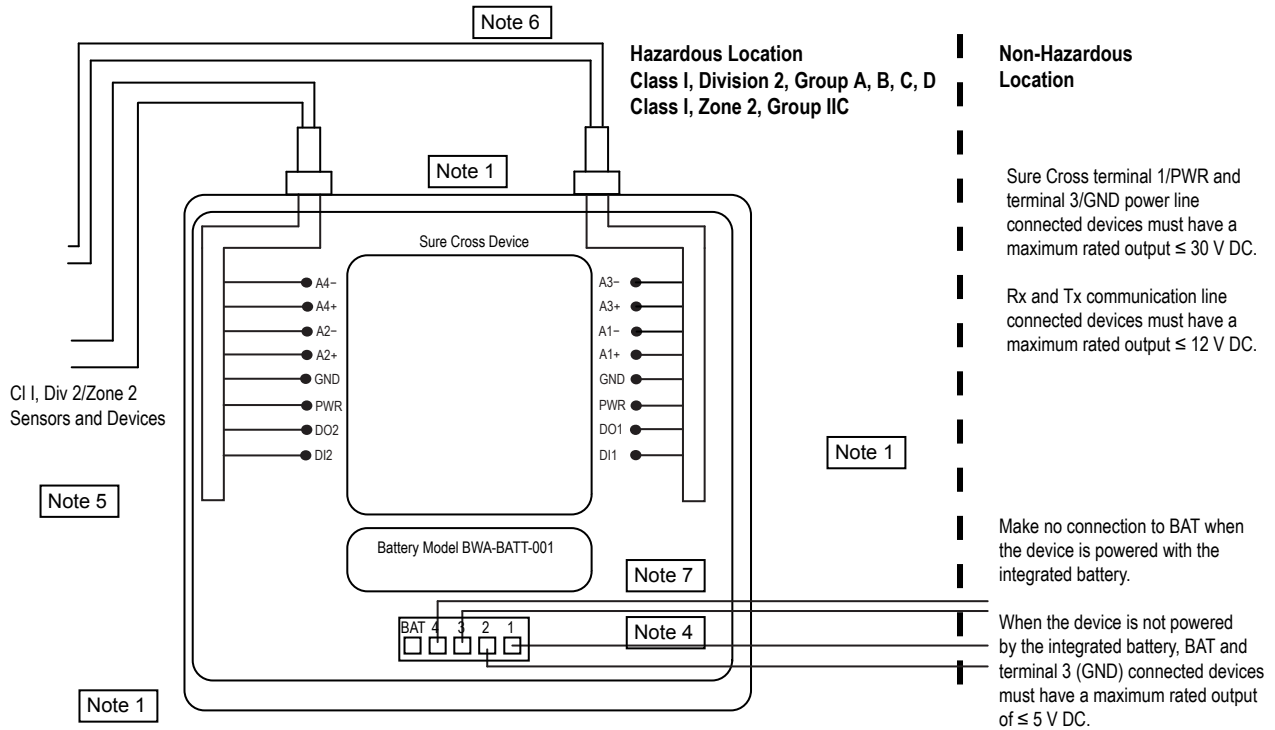
When the device is not powered by the integrated battery, BAT and terminal 3 (GND) connected devices must have a maximum rated output of ≤ 5 V DC.

SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

Performance Models	
DX80N9X1S-P1E	
DX80N2X1S-P1E	

3.11 MultiHop H3E and H4E Models

Battery-powered MultiHop H3E and H4E data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

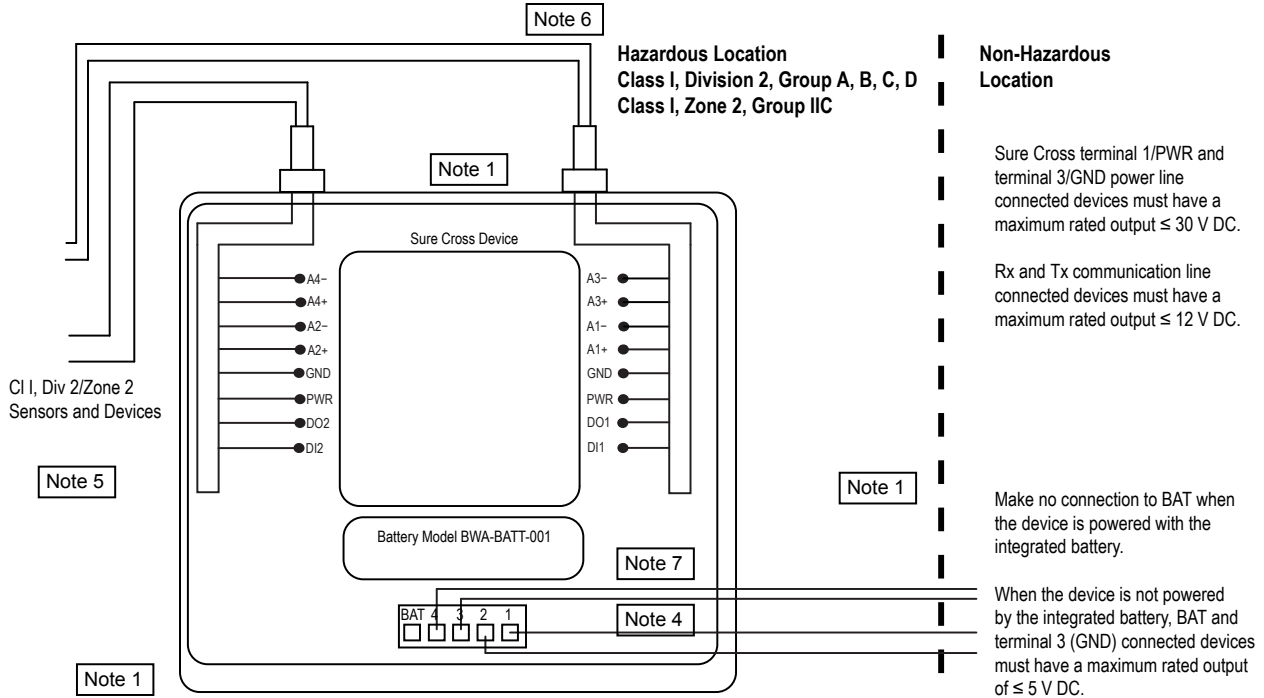


Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	
DX80DR9M-H3E	DX80DR9M-H4E
DX80DR2M-H3E	DX80DR2M-H4E

3.12 Performance P3E and P4E Models

Battery-powered data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

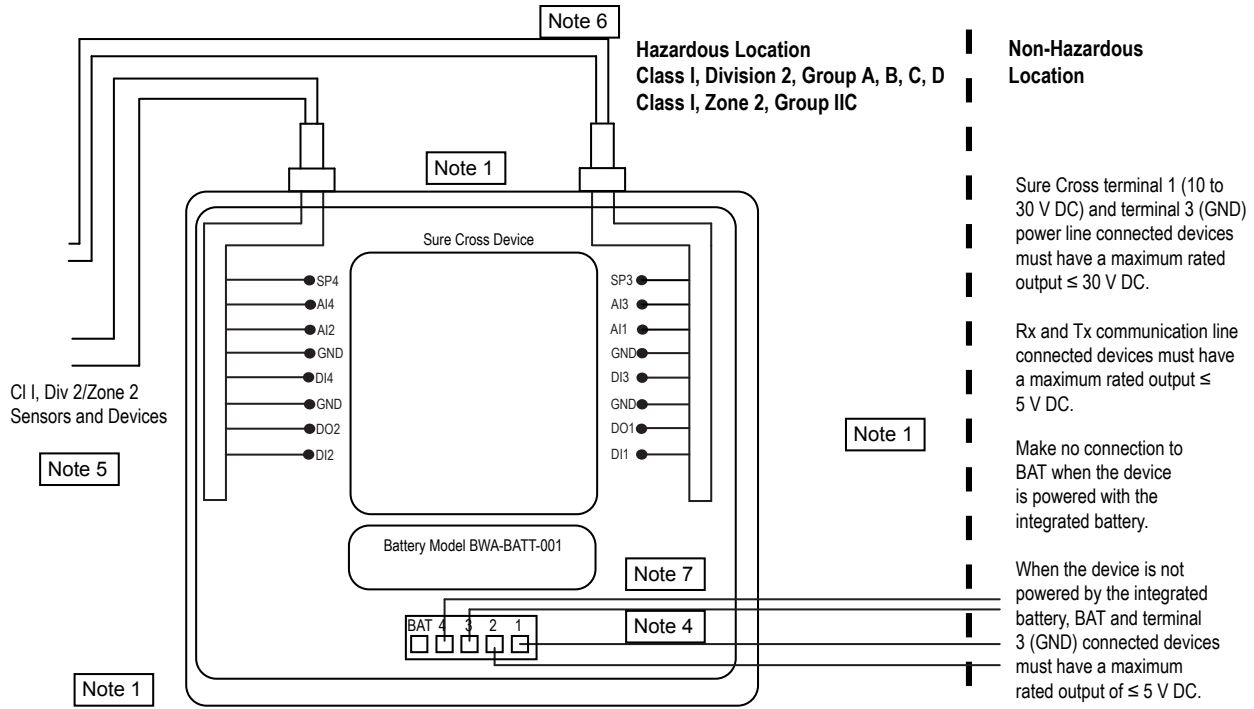


Refer to [Control Drawing Notes](#) on p. 5.

Performance Models	
DX80N9X1S-P3E	DX80N9X1S-P4E
DX80N2X1S-P3E	DX80N2X1S-P4E

3.13 MultiHop H5E Models

Battery-powered MultiHop H5E data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

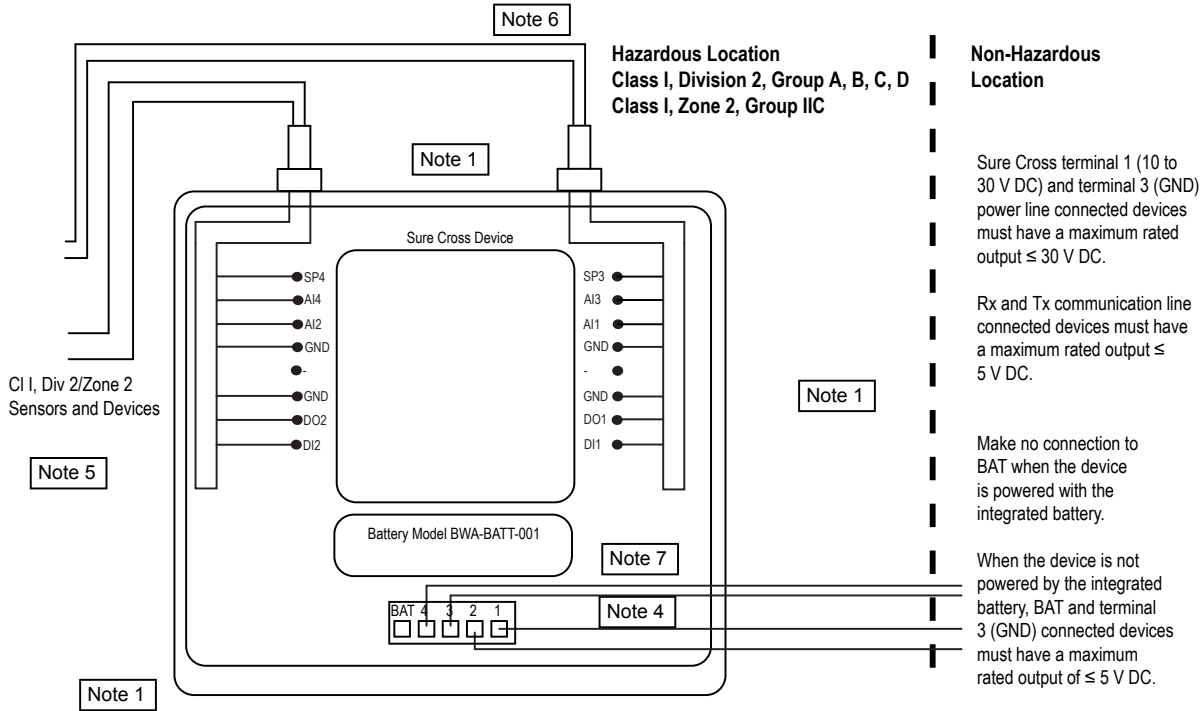


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	
DX80DR9M-H5E	
DX80DR2M-H5E	

3.14 Performance P5E Models

Battery-powered data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

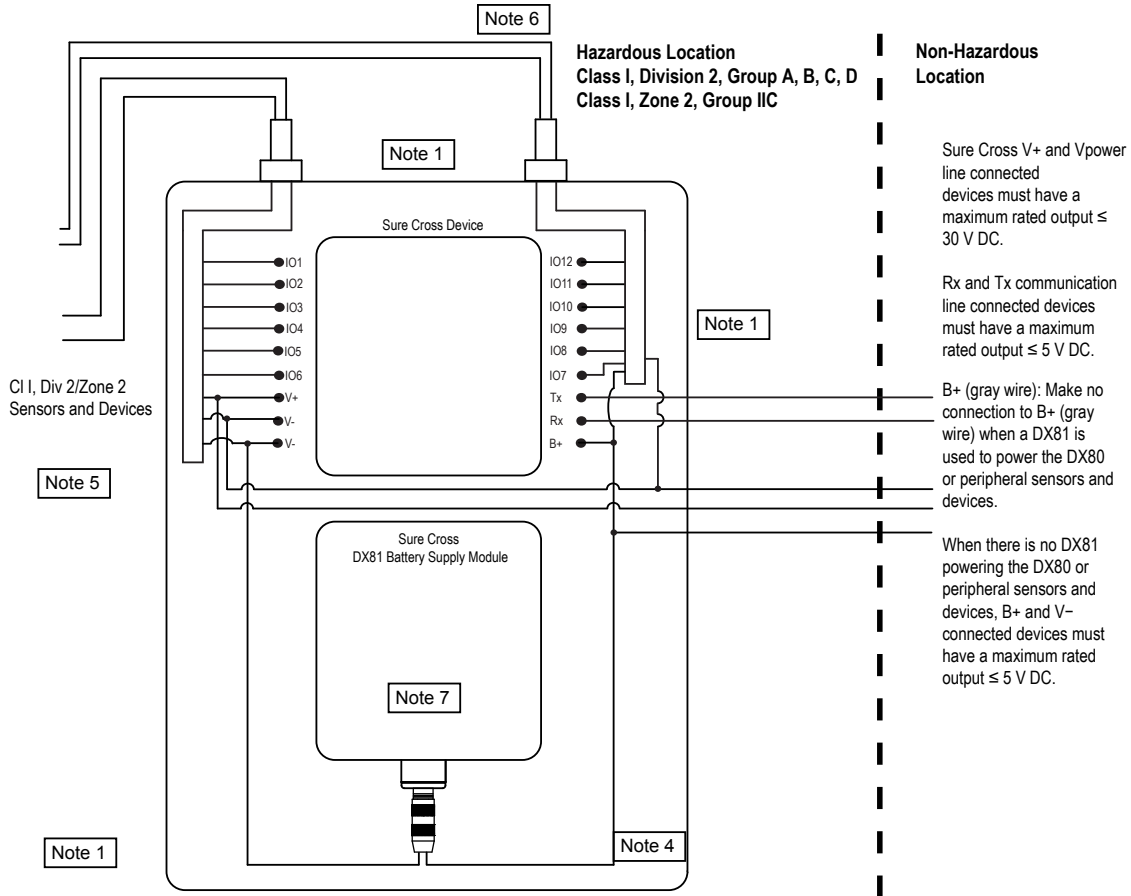


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

Performance Models	
DX80N9X1S-P5E	
DX80N2X1S-P5E	

3.15 Performance P7C and MultiHop H7C Models

FlexPower data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

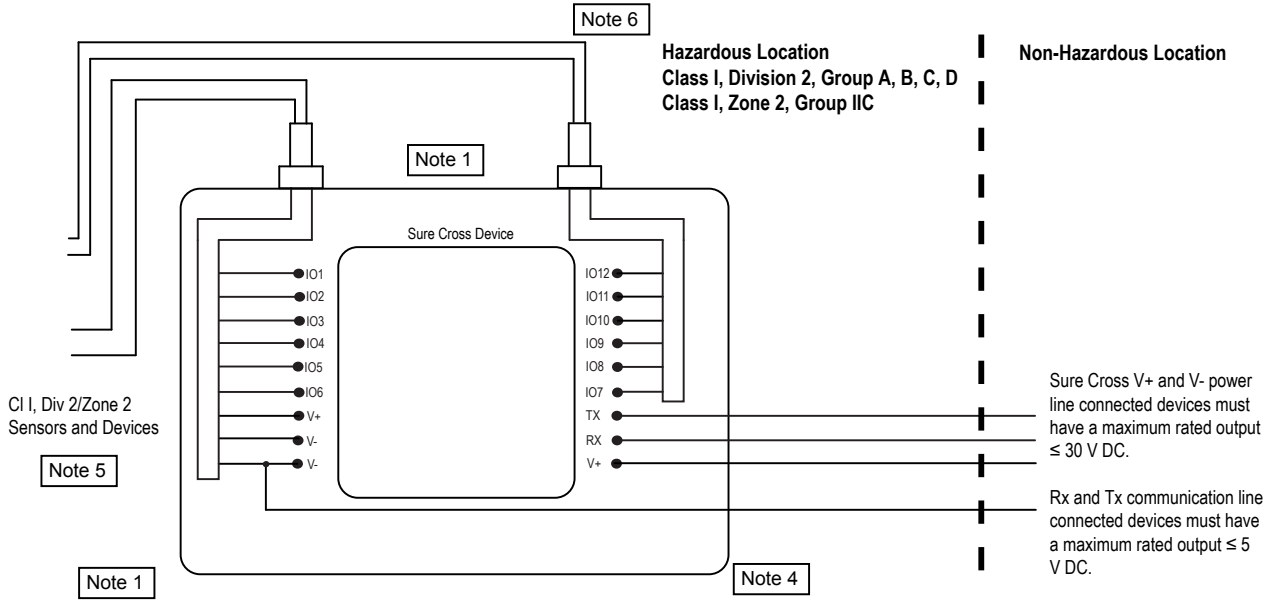


Refer to [Control Drawing Notes](#) on p. 5.

Performance Gateway Models	Performance Node Models	MultiHop Models	DX81 FlexPower Supply Module
DX80G9M2S-P7C	DX80N9X2S-P7C	DX80DR9M-H7C	DX81-LITH
DX80G2M2S-P7C	DX80N2X2S-P7C	DX80DR2M-H7C	

3.16 Performance P8C and H8C Models

10 to 30 V DC data acquisition modules for use in Class I, Division 2/Zone 2 Hazardous Locations.

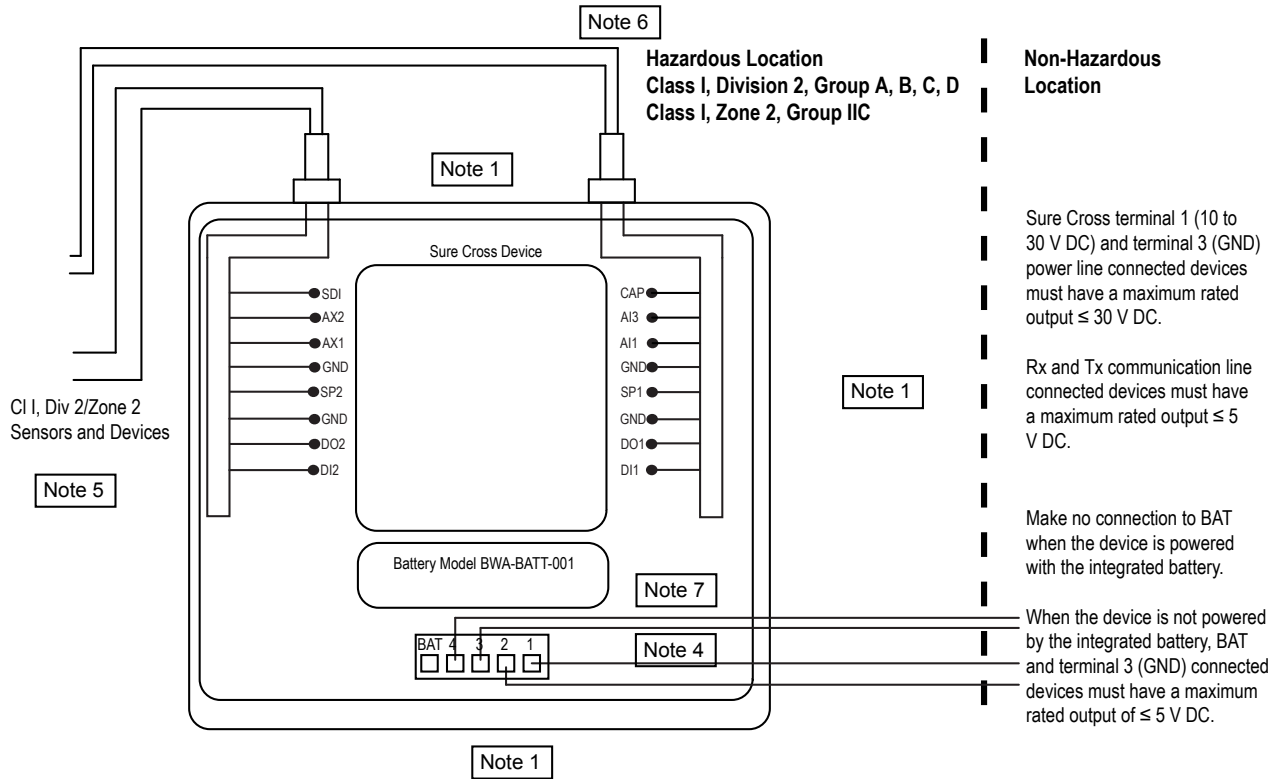


Refer to [Control Drawing Notes](#) on p. 5.

Performance Gateway Models	Performance Node Models	MultiHop Models
DX80G9M6S-P8C	DX80N9X6S-P8C	DX80DR9M-H8C
DX80G2M6S-P8C	DX80N2X6S-P8C	DX80DR2M-H8C

3.17 Performance P12E and MultiHop H12E Models

Battery-powered MultiHop H12E data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

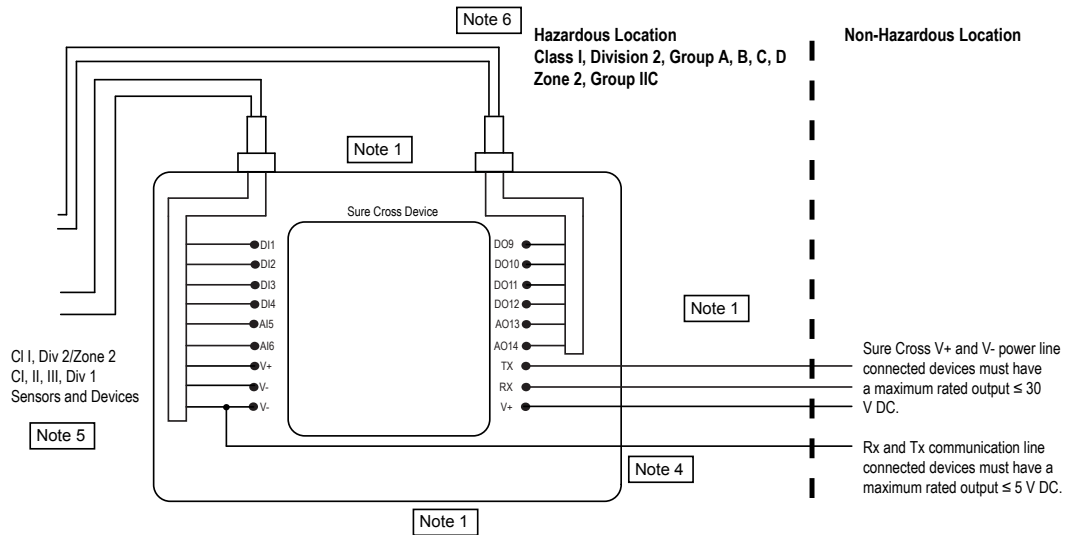


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	Performance Node Models
DX80DR9M-H12E	DX80N9X1S-P12E
DX80DR2M-H12E	DX80N2X1S-P12E

3.18 Pre-mapped PM2 Gateway and Nodes

10 to 30 V DC powered PM2 Performance DX80 4/4/2/2 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

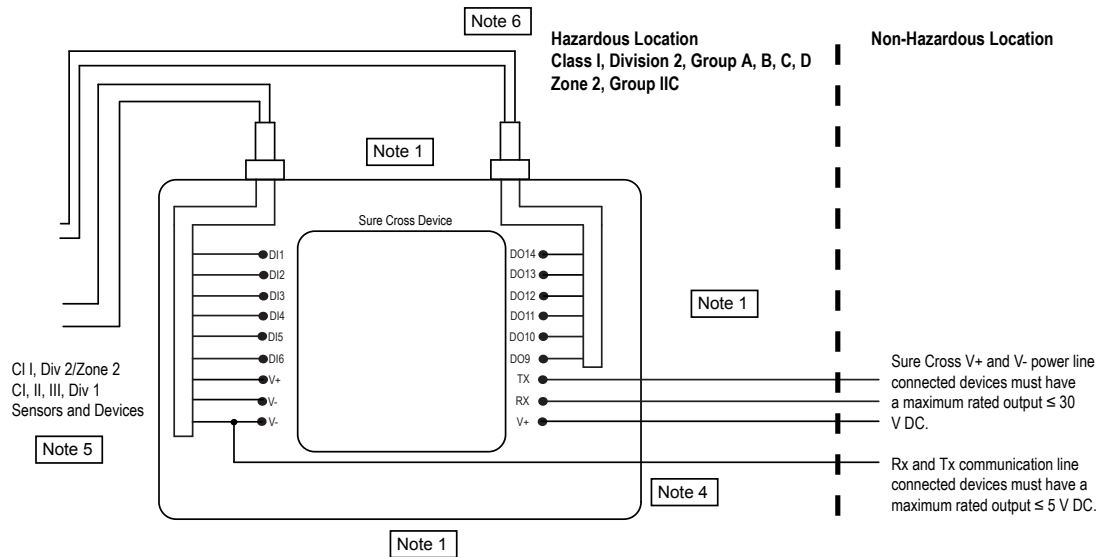


Refer to [Control Drawing Notes](#) on p. 5.

PM2 Performance Mapped Models	
DX80G2M6S-PM2C	DX80N2X6S-PM2C
DX80G9M6S-PM2C	DX80N9X6S-PM2C

3.19 Pre-mapped PM8 Gateways and Nodes

10 to 30 V DC powered PM8 Performance DX80 12 I/O data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

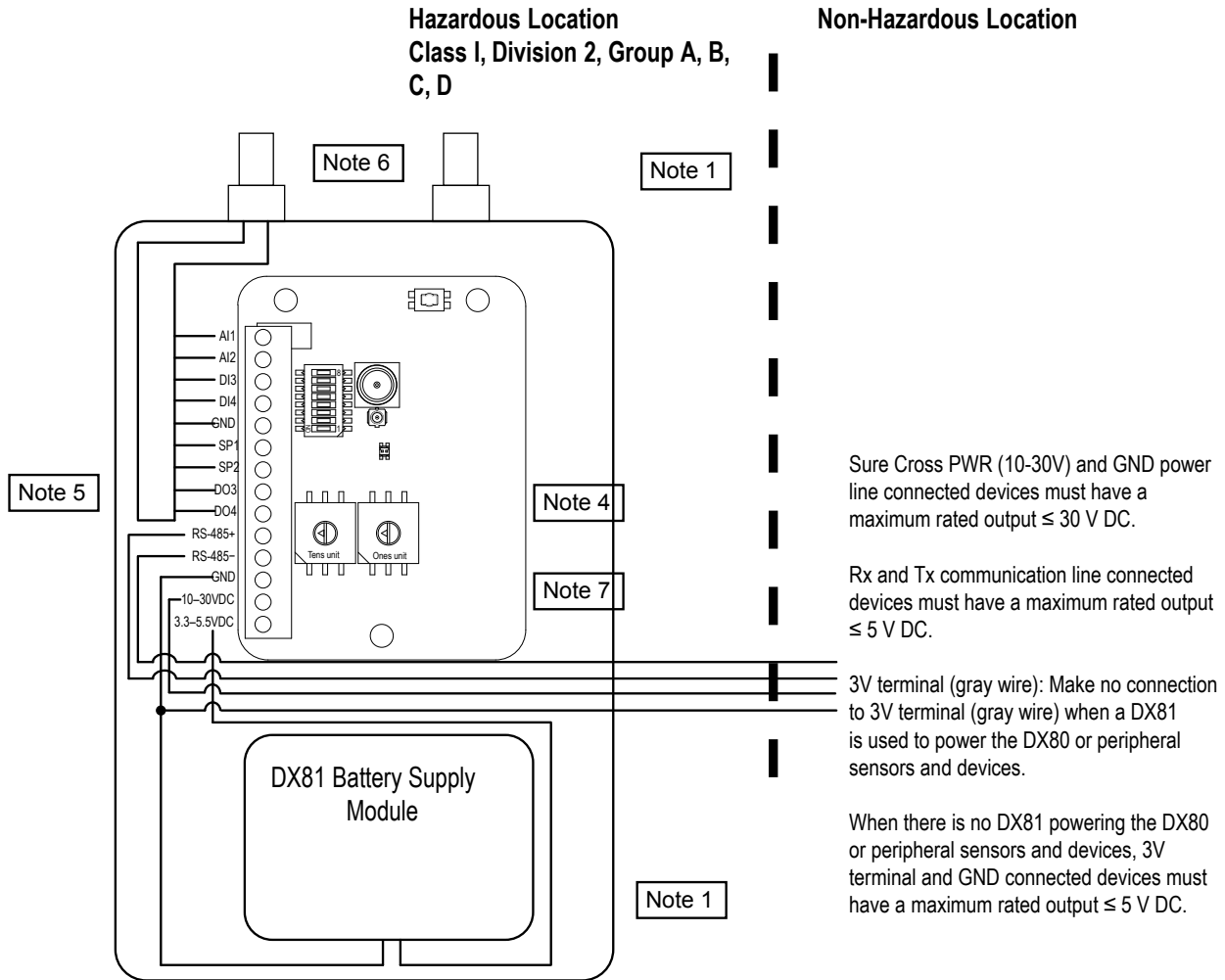


Refer to [Control Drawing Notes](#) on p. 5.

PM8 Performance Mapped Models	
DX80G2M6S-PM8C	DX80N9X6S-PM8C
DX80G9M6S-PM8C	DX80N2X6S-PM8LC
DX80N2X6S-PM8C	DX80N9X6S-PM8LC

3.20 MultiHop HB1 Board Modules

FlexPower board module MultiHop HB1 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

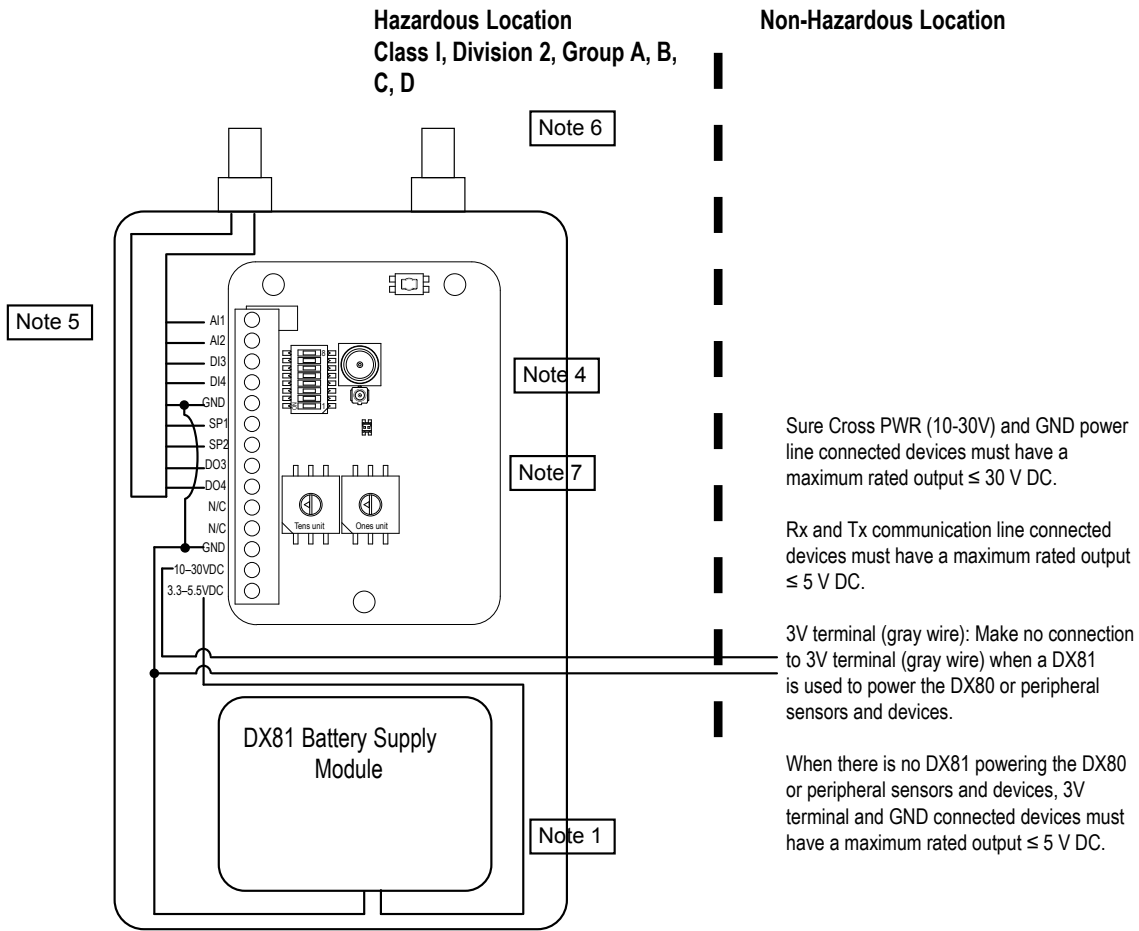


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	DX81 FlexPower Supply Module
DX80DR9M-HB1	DX81-LITH
DX80DR2M-HB1	

3.21 Performance PB1 Board Modules

FlexPower board module Performance PB1 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

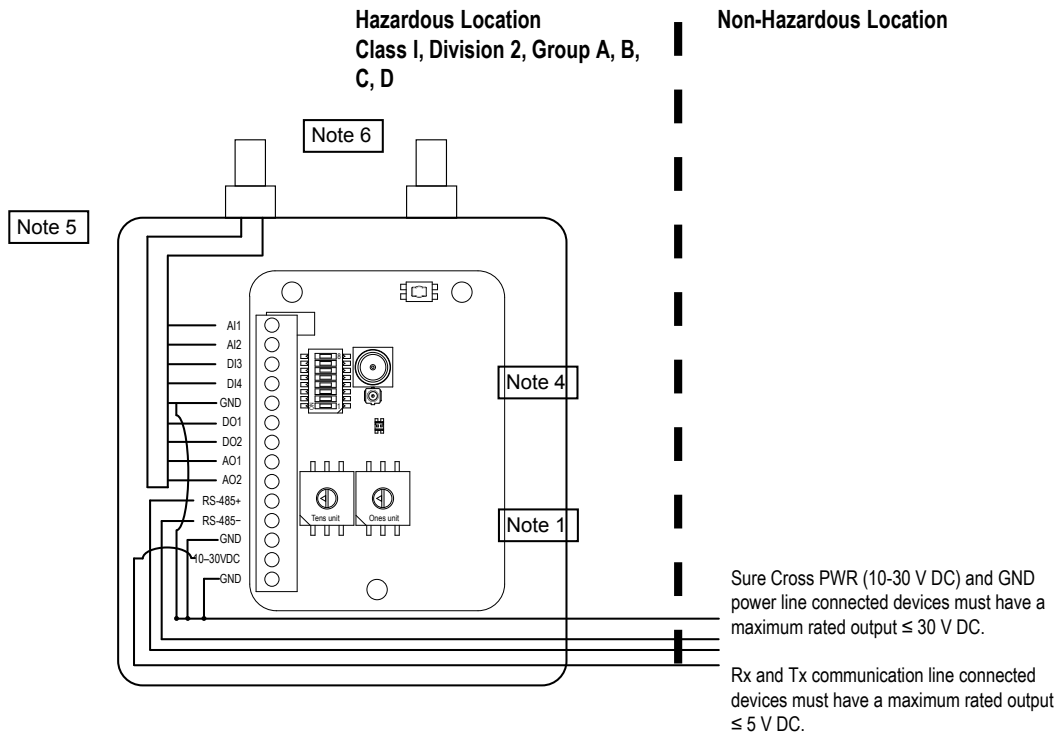


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	DX81 FlexPower Supply Module
DX80N9X2S-PB1	DX81-LITH
DX80N2X2S-PB1	

3.22 MultiHop HB2 Board Modules

10 to 30 V DC board module MultiHop HB2 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

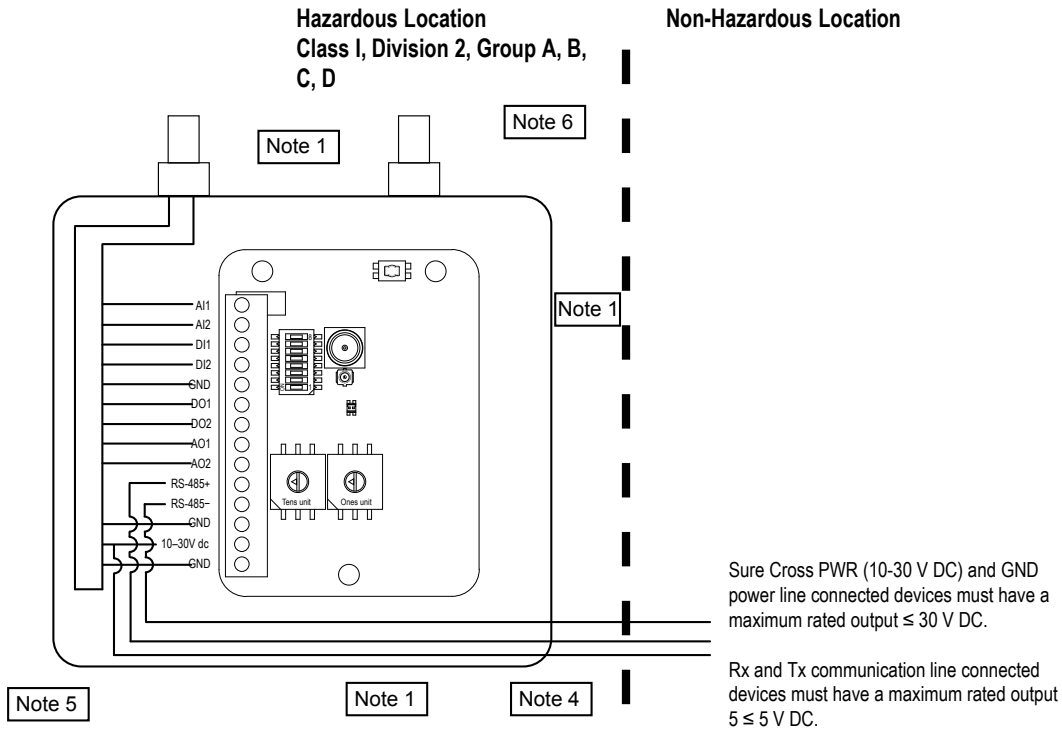


Refer to [Control Drawing Notes](#) on p. 5.

MultiHop Models	
DX80DR9M-HB2	
DX80DR2M-HB2	

3.23 Performance PB2 Board Modules and B2Q Gateway Models

10 to 30 V DC board module Performance PB2 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

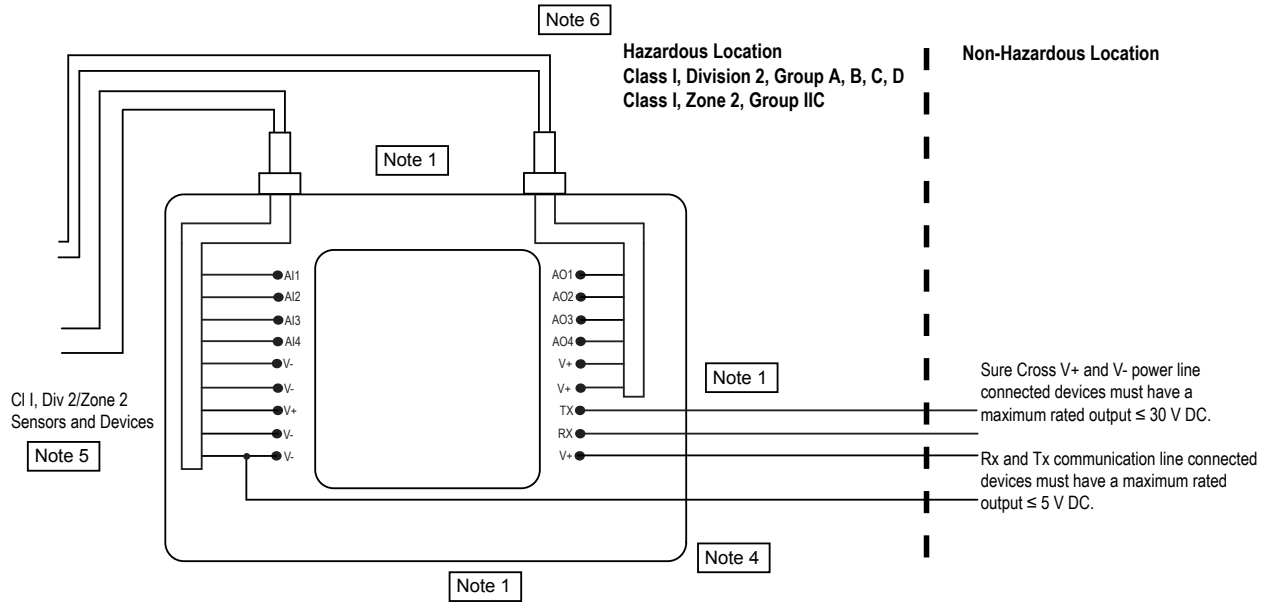


Refer to [Control Drawing Notes](#) on p. 5.

Performance Gateway PB2 Board Modules	Performance Node PB2 Board Modules	Gateway Models
DX80G9M6S-PB2	DX80N9X6S-PB2	DX80G2M6S-B2Q
DX80G2M6S-PB2	DX80N2X6S-PB2	

3.24 Gateway and Nodes 0044 Analog Models

10 to 30 V DC powered DX80, 0044 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

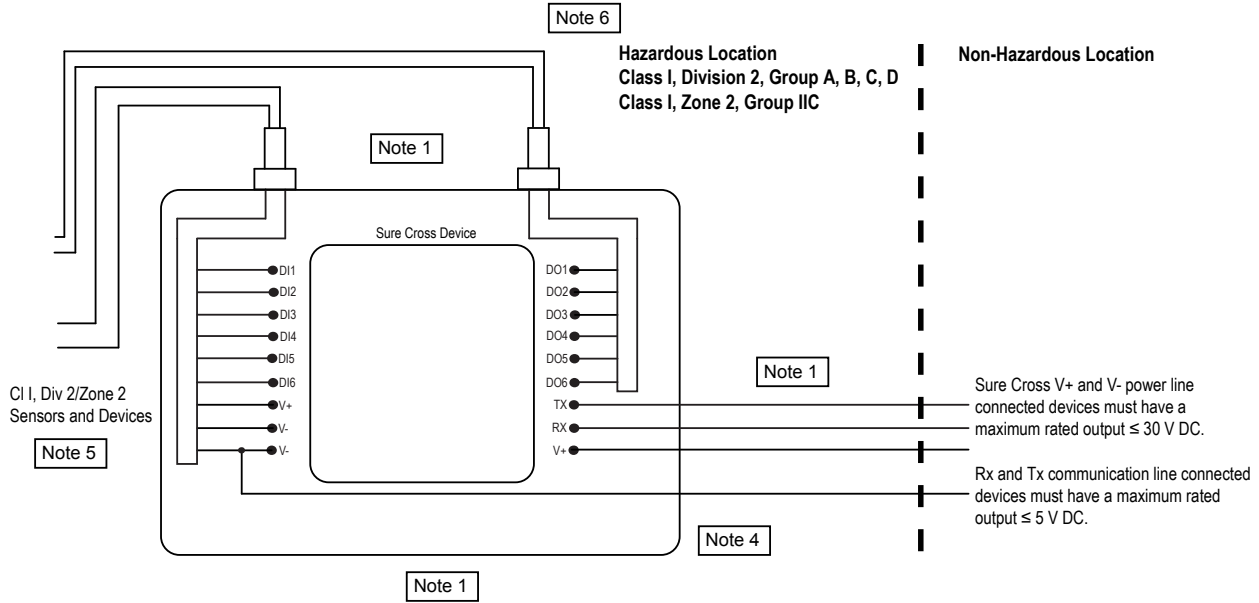


Refer to [Control Drawing Notes](#) on p. 5.

Gateway Models	Node Models
DX80G9M6W0P0M4M4C	DX80N9X6W0P0M4M4C
DX80G9M6S0P0M4M4C	DX80N9X6S0P0M4M4C
DX80G2M6W0P0M4M4C	DX80N2X6W0P0M4M4C
DX80G2M6S0P0M4M4C	DX80N2X6S0P0M4M4C
DX80G9M6W0P0V4V4C	DX80N9X6W0P0V4V4C
DX80G9M6S0P0V4V4C	DX80N9X6S0P0V4V4C
DX80G2M6W0P0V4V4C	DX80N2X6W0P0V4V4C
DX80G2M6S0P0V4V4C	DX80N2X6S0P0V4V4C

3.25 Gateway and Node with 6600 PNP and NPN Models

10 to 30 V DC powered DX80, 6600 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

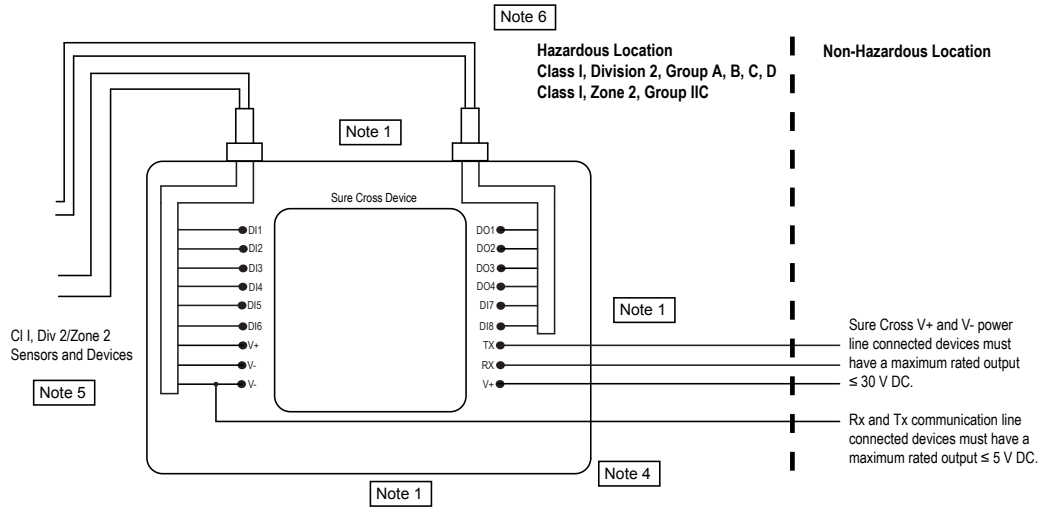


Refer to [Control Drawing Notes](#) on p. 5.

Gateway Models		Node Models	
DX80G9M6W6P6C	DX80G2M6-QC	DX80N9X6W6P6C	DX80N9X6W6N6C
DX80G9M6S6P6C	DX80G9M6W6P6ZC	DX80N9X6S6P6C	DX80N9X6S6N6C
DX80G2M6W6P6C	DX80G9M6S6P6ZC	DX80N2X6W6P6C	DX80N2X6W6N6C
DX80G2M6S6P6C	DX80G2M6W6P6ZC	DX80N2X6S6P6C	DX80N2X6S6N6C
DX80G9M6W6N6C	DX80G2M6S6P6ZC		
DX80G9M6S6N6C			
DX80G2M6W6N6C			
DX80G2M6S6N6C			

3.26 Gateway and Node 8400 Models

10 to 30 V DC powered DX80 8400 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

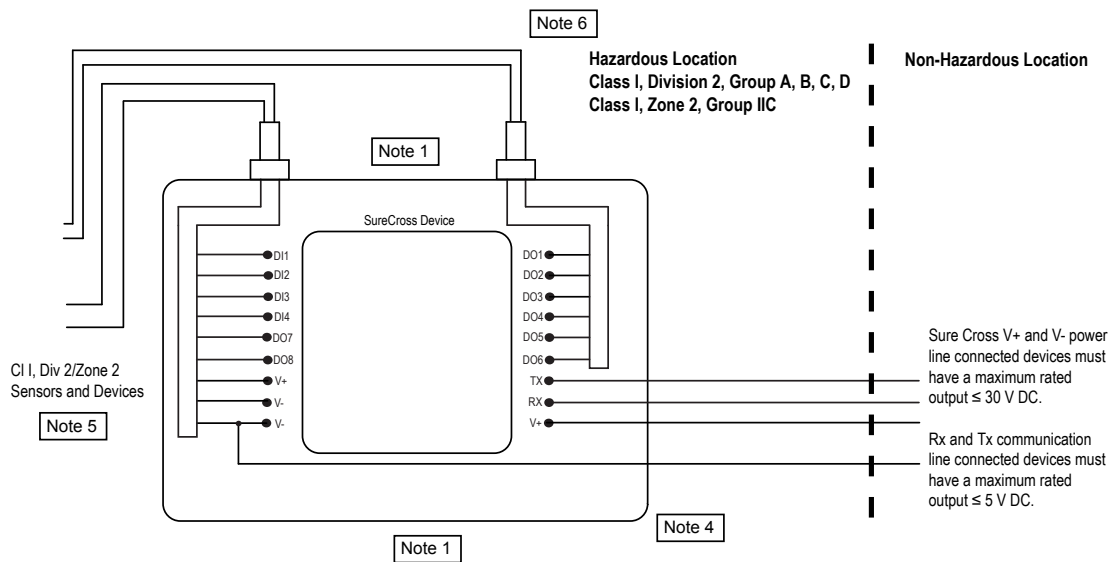


Refer to [Control Drawing Notes](#) on p. 5.

Gateway Models		Node Models	
DX80G9M6W8P4C	DX80G2M6W8P4C	DX80N9X6W8P4C	DX80N2X6W8P4C
DX80G9M6S8P4C	DX80G2M6S8P4C	DX80N9X6S8P4C	DX80N2X6S8P4C

3.27 Gateway and Node 4800 Models

10 to 30 V DC powered DX80 4800 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.



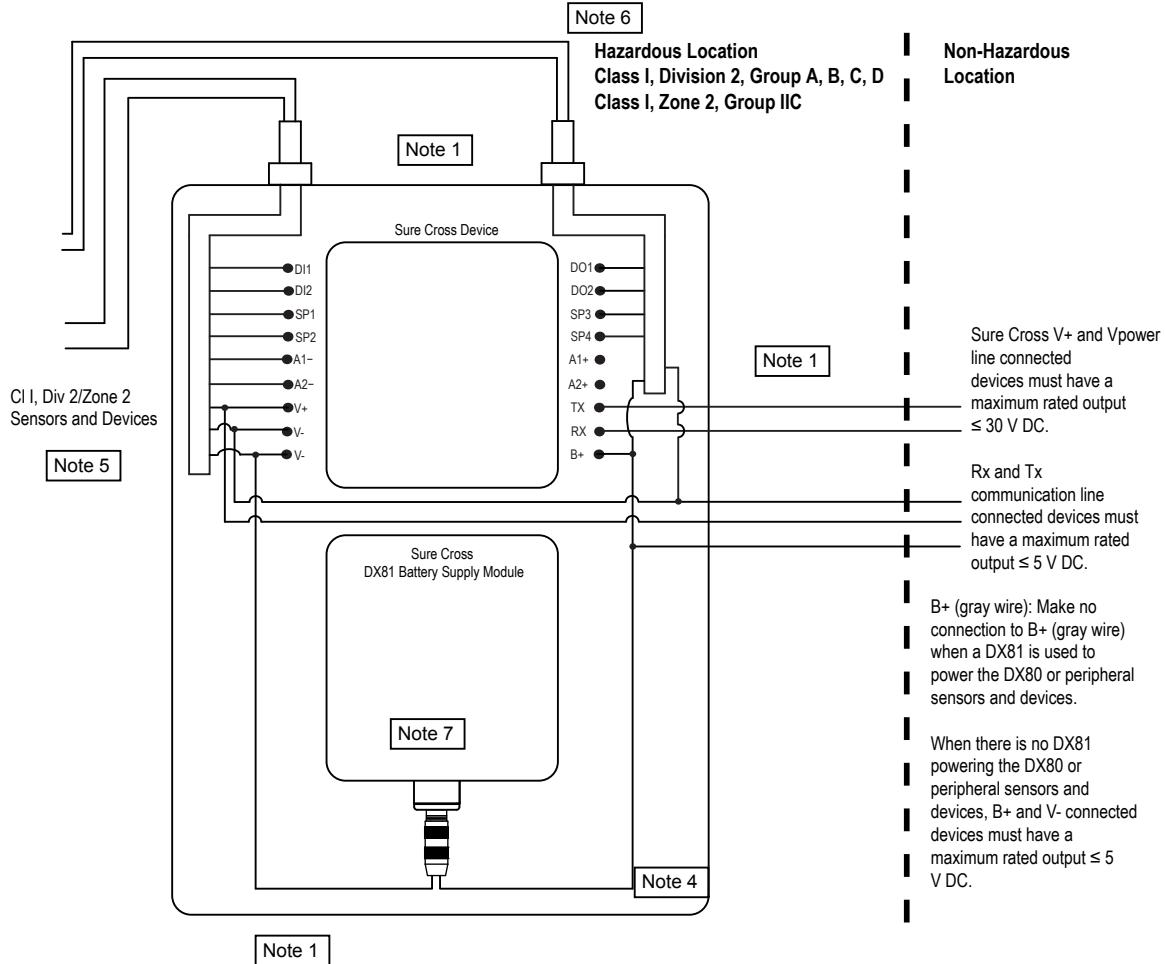
Refer to [Control Drawing Notes](#) on p. 5.

Gateway Models		Node Models	
DX80G9M6W4P8C	DX80G2M6W4P8C	DX80N9X6W4P8C	DX80N2X6W4P8C

Gateway Models		Node Models	
DX80G9M6S4P8C	DX80G2M6S4P8C	DX80N9X6S4P8C	DX80N2X6S4P8C

3.28 FlexPower 2220 Node with Switch Power Models

FlexPower-powered DX80, 2220 data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

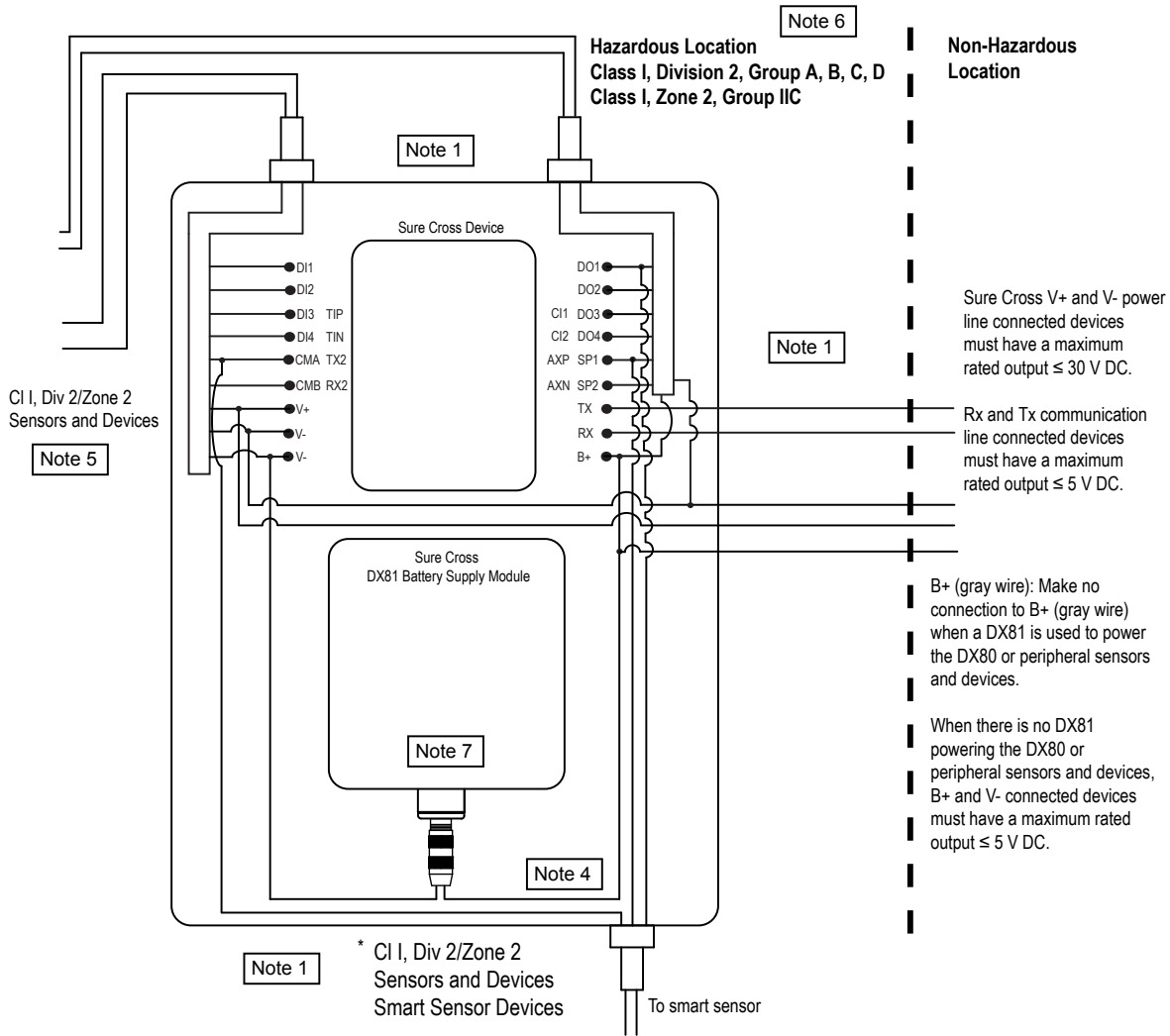


SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

FlexPower Node Models	DX81 FlexPower Supply Module
DX80N9X2W2N2M2C	DX81-LITH
DX80N9X2S2N2M2C	
DX80N2X2W2N2M2C	
DX80N2X2S2N2M2C	

3.29 Counter and Serial Models

FlexPower-powered DX80, data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.



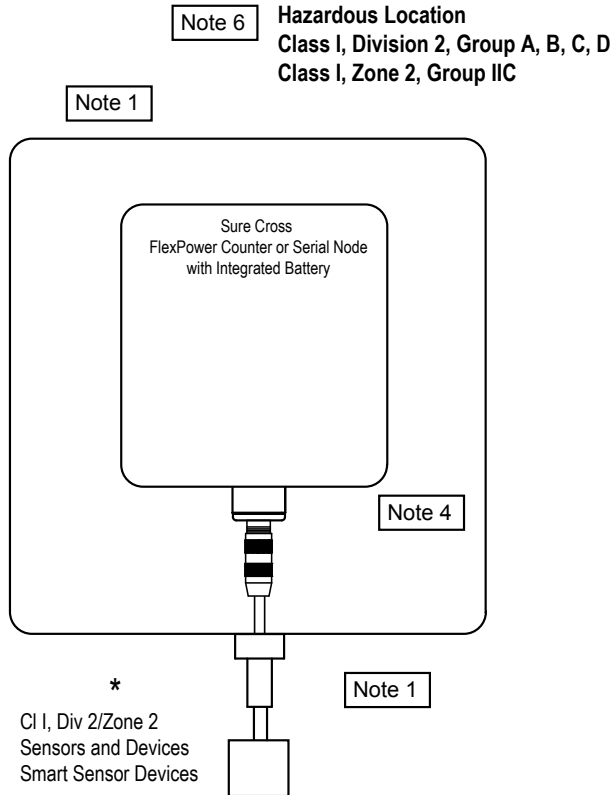
* The field circuits are not limited energy. Field devices must therefore be certified for installation in Class I, Division 2/Zone 2 hazardous locations and use Division 2/Zone 2 wiring methods per CEC and NEC. Field circuits connected to the white or gray inputs can draw a maximum of 5 mA from 3 V/VGnd DC per input and must have a maximum rated output < 30 V/VGnd DC. Field circuits connected to the black output wire must have a maximum rated voltage < 30 V/VGnd and may consume a maximum current <10 mA. Ta=80 C maximum.

SP1, SP2, SP3, SP4 are not limited energy. Field circuits connected to switch power must have a maximum rated voltage ≤ 24 V and may consume < 260 mA. Refer to [Control Drawing Notes](#) on p. 5.

FlexPower Nodes Models	Performance and MultiHop Models	Smart Sensors	DX81 FlexPower Supply Module
DX80N9X2W4N4C	DX80N2X2W4A2C	DX80N9X2S-P6C	DX81-LITH
DX80N2X2W4N4C	DX80N2X2S4A2C	DX80N2X2S-P6C	
DX80N9X2S4N4C	DX80N9X2W2SC	DX80DR9M-H6C	
DX80N2X2S4N4C	DX80N9X2S2SC	DX80DR2M-H6C	
DX80N9X2W4A2C	DX80N2X2W2SC		
DX80N9X2S4A2C	DX80N2X2S2SC		

3.30 Counter and Serial Interface with Integrated Battery Models

Battery (3.6 to 5.5 V DC) powered DX80 Counter or Serial Node with an integrated battery I/O acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.



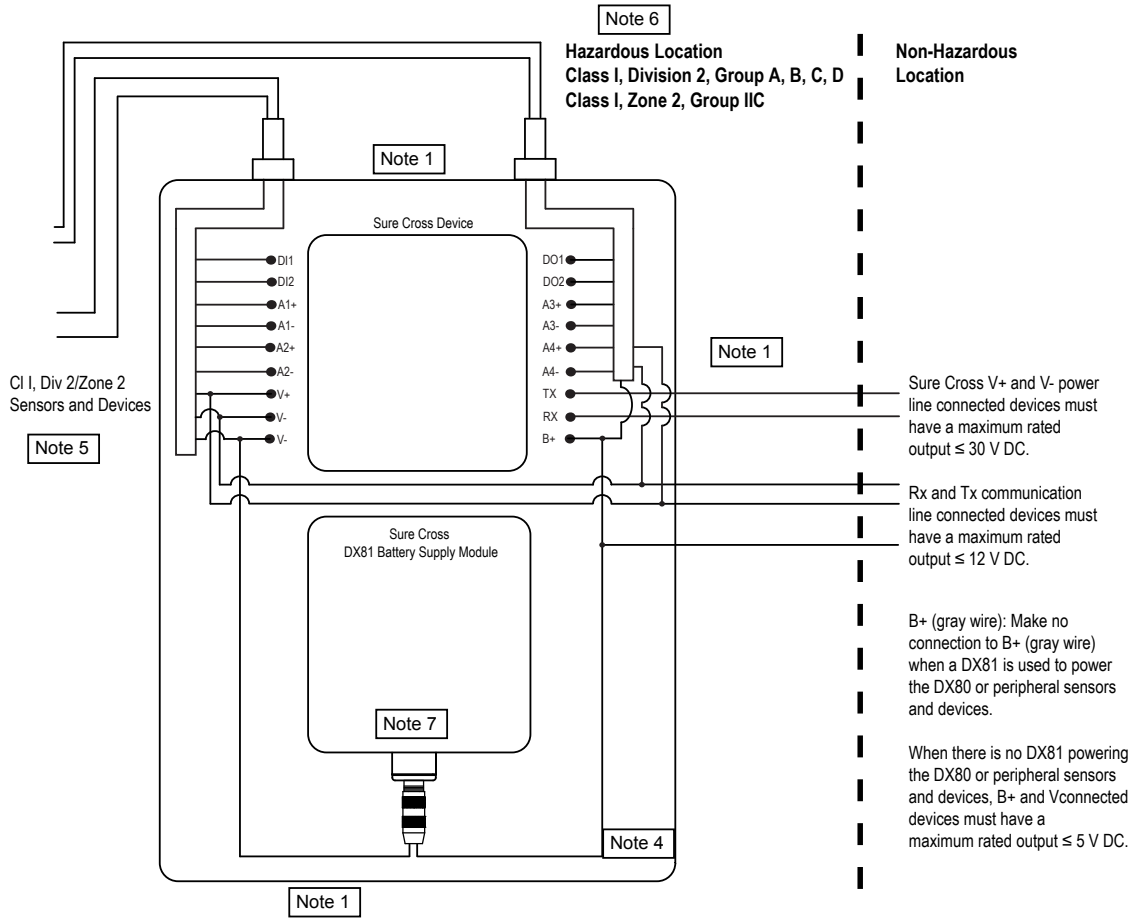
* The field circuits are not limited energy. Field devices must therefore be certified for installation in Class I, Division 2/Zone 2 hazardous locations and use Division 2/Zone 2 wiring methods per CEC and NEC. Field circuits connected to the white or gray inputs can draw a maximum of 5 mA from 3 V/VGnd DC per input and must have a maximum rated output < 30 V/VGnd DC. Field circuits connected to the black output wire must have a maximum rated voltage < 30 V/VGnd and may consume a maximum current <10 mA. Ta=80 C maximum.

Refer to [Control Drawing Notes](#) on p. 5.

FlexPower Node Models		Performance and MultiHop Models	Smart Sensors
DX80N9X1W2A1	DX80N9X1W1S	DX80N9X1S-P6	M12FTH3Q
DX80N9X1S2A1	DX80N9X1S1S	DX80N2X1S-P6	M12FTH4Q
DX80N2X1W2A1	DX80N2X1W1S	DX80DR9M-H6	
DX80N2X1S2A1	DX80N2X1S1S	DX80DR2M-H6	

3.31 Thermocouple and RTD Models

FlexPower-powered DX80 Discrete and Analog, Thermocouple, or RTD data acquisition module for use in Class I, Division 2/Zone 2 Hazardous Locations.

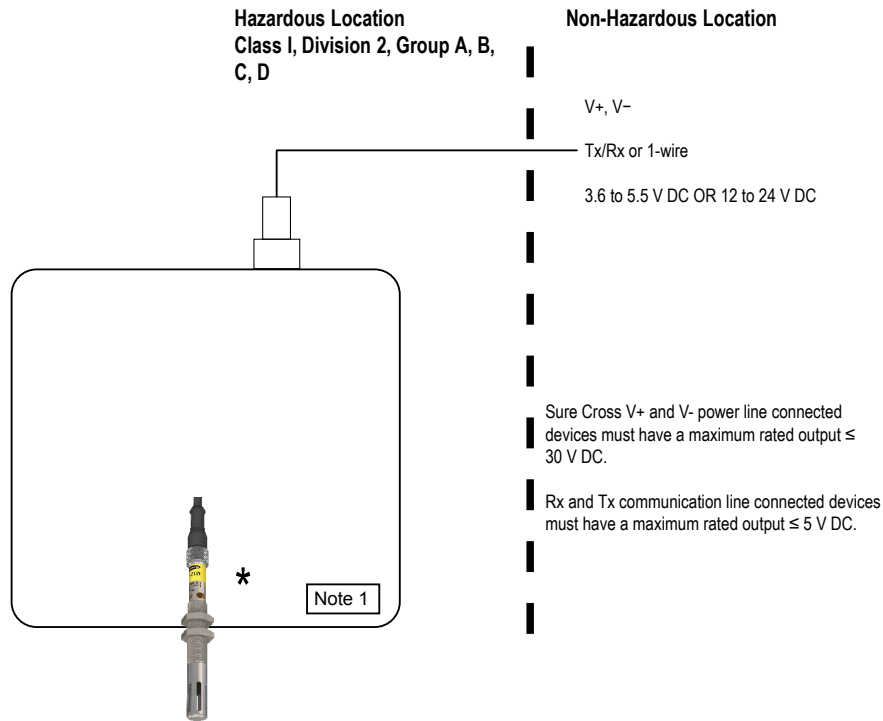


Refer to [Control Drawing Notes](#) on p. 5.

FlexPower Node Models	MultiHop Models	Performance Models	DX81 FlexPower Supply Module	
DX80N9X2W2N2M4C	DX80N2X2W2N2TC	DX80DR9M-H3C	DX80N9X2S-P3C	DX81-LITH
DX80N9X2S2N2M4C	DX80N2X2S2N2TC	DX80DR2M-H3C	DX80N2X2S-P3C	
DX80N2X2W2N2M4C	DX80N9X2W0P0RC	DX80DR9M-H4C	DX80N9X2S-P4C	
DX80N2X2S2N2M4C	DX80N9X2S0P0RC	DX80DR2M-H4C	DX80N2X2S-P4C	
DX80N9X2W2N2TC	DX80N2X2W0P0RC			
DX80N9X2S2N2TC	DX80N2X2S0P0RC			

3.32 M12FTH*Q Temperature and Humidity Sensor Models

FlexPower (3.6 to 5.5 V DC or 12 to 24 V DC) powered temperature/humidity sensor for use in Class I, Division 2/Zone 2 Hazardous Locations.



* The field connection circuits are not limited energy. The field connection, therefore, must be inside a suitable enclosure or use Division 2/Zone 2 wiring methods per CEC and NEC.

Refer to [Control Drawing Notes](#) on p. 5.

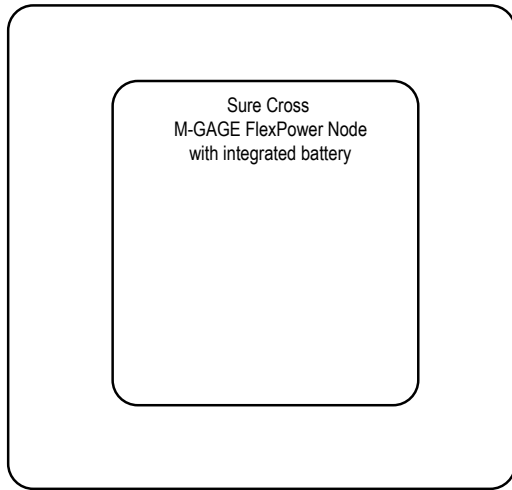
Sensor Models	
M12FTH3Q	
M12FTH4Q	

3.33 M-GAGE Node Models

Integrated battery (3.6 to 5.5 V DC) powered M-GAGE with no externally accessed I/O module for use in Class I, Division 2/ Zone 2 Hazardous Locations.

Note 6

Hazardous Location
Class I, Division 2, Group A, B, C, D
Class I, Zone 2, Group IIC



Note 1

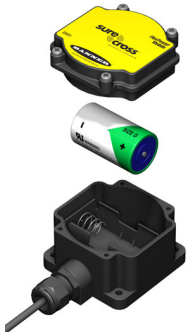
Refer to [Control Drawing Notes](#) on p. 5.

M-GAGE Node Models	
DX80N9X1W0P0Z	
DX80N2X1W0P0Z	

4 Install or Replace the Battery for a DX81 Model

To replace the lithium "D" cell battery in the FlexPower Supply Module, follow these steps.

1. Unplug the **DX81-LITH** or **DX81H** FlexPower Supply Module from the Sure Cross® device it powers.
2. Remove the four screws mounting the battery module face plate to the body and remove the face plate.
3. Remove the discharged battery by pressing the battery towards the negative terminal to compress the spring. Pry up on the battery's positive end to remove from the battery holder.
4. Install the new battery or batteries.
5. Verify the battery's positive and negative terminals align to the positive and negative terminals of the battery holder mounted within the case. Caution: There is a risk of explosion if the battery is replaced incorrectly.
6. After replacing the battery, allow up to 60 seconds for the device to power up.
7. Properly dispose of your used battery according to local regulations by taking it to a hazardous waste collection site, an e-waste disposal center, or any other facility qualified to accept lithium batteries.



For outside or high humidity environments, dielectric grease may be applied to the battery terminals to prevent moisture and corrosion buildup.

As with all batteries, these are a fire, explosion, and severe burn hazard. Do not burn or expose them to high temperatures. Do not recharge, crush, disassemble, or expose the contents to water.

The battery may be replaced in explosive gas atmospheres.

For non-hazardous locations, the replacement battery is model **BWA-BATT-011**. For non-hazardous or hazardous locations, the replacement battery is Xeno model XL-205F, Banner model **BWA-BATT-001**. For pricing and availability, contact Banner Engineering.



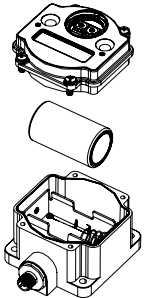
WARNING:

- Potential electrostatic charging hazard — only clean with a damp cloth.
- The replacement battery **MUST** be a Banner approved battery, model number **BWA-BATT-001**. Use of a different battery will **VOID** the intrinsic safety rating of this device and may result in an explosion!
- When replacing the battery, the negative end of the battery holder is the side with the spring terminal. This side is marked with a minus (–) sign.
- Do not attempt to recharge the battery. These batteries are not rechargeable. Recharging may cause serious injury to personnel or damage the equipment. Replace only with factory recommended batteries.

5 Install or Replace the Battery for a DX80 Integrated Battery Model

To install or replace the 3.6 V lithium "D" cell battery in any model with a battery integrated into the housing, follow these steps.

1. Remove the four screws mounting the face plate to the housing and remove the face plate.
2. Remove the discharged battery.
3. Install the new battery, verifying the battery's positive and negative terminals align to the positive and negative terminals of the battery holder mounted within the case.
4. After installing the battery, allow up to 60 seconds for the device to power up.
5. Properly dispose of used batteries according to local regulations by taking it to a hazardous waste collection site, an e-waste disposal center, or other facility qualified to accept lithium batteries.



CAUTION: There is a risk of explosion if the battery is replaced incorrectly.

As with all batteries, these are a fire, explosion, and severe burn hazard. Do not burn or expose them to high temperatures. Do not recharge, crush, disassemble, or expose the contents to water.

For non-hazardous locations, the replacement battery is model **BWA-BATT-011**. For non-hazardous or hazardous locations, the replacement battery is Xeno model XL-205F, Banner model **BWA-BATT-001**. For pricing and availability, contact Banner Engineering.

6 Install or Replace the Battery on a DX80E Model

To replace the lithium "D" cell battery or batteries in any DX80E model with the batter integrated into the housing, follow these steps.

1. Remove the four screws mounting the face plate to the housing and remove the face plate. Do not remove the radio cover from the face plate.
2. Remove the discharged battery or batteries.
3. Install the new battery or batteries.
4. Verify the positive and negative terminals align to the positive and negative terminals of the battery holder mounted within the case.
5. Allow up to 60 seconds for the device to power up.
6. Properly dispose of used batteries according to local regulations by taking it to a hazardous waste collection site, an e-waste disposal center, or other facility qualified to accept lithium batteries.



CAUTION: There is a risk of explosion if the battery is replaced incorrectly.

For outside or high humidity environments, dielectric grease may be applied to the battery terminals to prevent moisture and corrosion buildup.

As with all batteries, these are a fire, explosion, and severe burn hazard. Do not burn or expose them to high temperatures. Do not recharge, crush, disassemble, or expose the contents to water.

For non-hazardous locations, the replacement battery is model **BWA-BATT-011**. For non-hazardous or hazardous locations, the replacement battery is Xeno model XL-205F, Banner model **BWA-BATT-001**. For pricing and availability, contact Banner Engineering.

7 Warnings

Install and properly ground a qualified surge suppressor when installing a remote antenna system. Remote antenna configurations installed without surge suppressors invalidate the manufacturer's warranty. Keep the ground wire as short as possible and make all ground connections to a single-point ground system to ensure no ground loops are created. No surge suppressor can absorb all lightning strikes; do not touch the Sure Cross® device or any equipment connected to the Sure Cross device during a thunderstorm.

Exporting Sure Cross® Radios. It is our intent to fully comply with all national and regional regulations regarding radio frequency emissions. **Customers who want to re-export this product to a country other than that to which it was sold must ensure the device is approved in the destination country.** The Sure Cross wireless products were certified for use in these countries using the antenna that ships with the product. When using other antennas, verify you are not exceeding the transmit power levels allowed by local governing agencies. This device has been designed to operate with the antennas listed on Banner Engineering's website and having a maximum gain of 9 dBm. Antennas not included in this list or having a gain greater than 9 dBm are strictly prohibited for use with this device. The required antenna impedance is 50 ohms. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen such that the equivalent isotropically radiated power (EIRP) is not more than that permitted for successful communication. Consult with Banner Engineering Corp. if the destination country is not on this list.

7.1 Banner Engineering Corp. Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. **IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.**

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For patent information, see www.bannerengineering.com/patents.

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