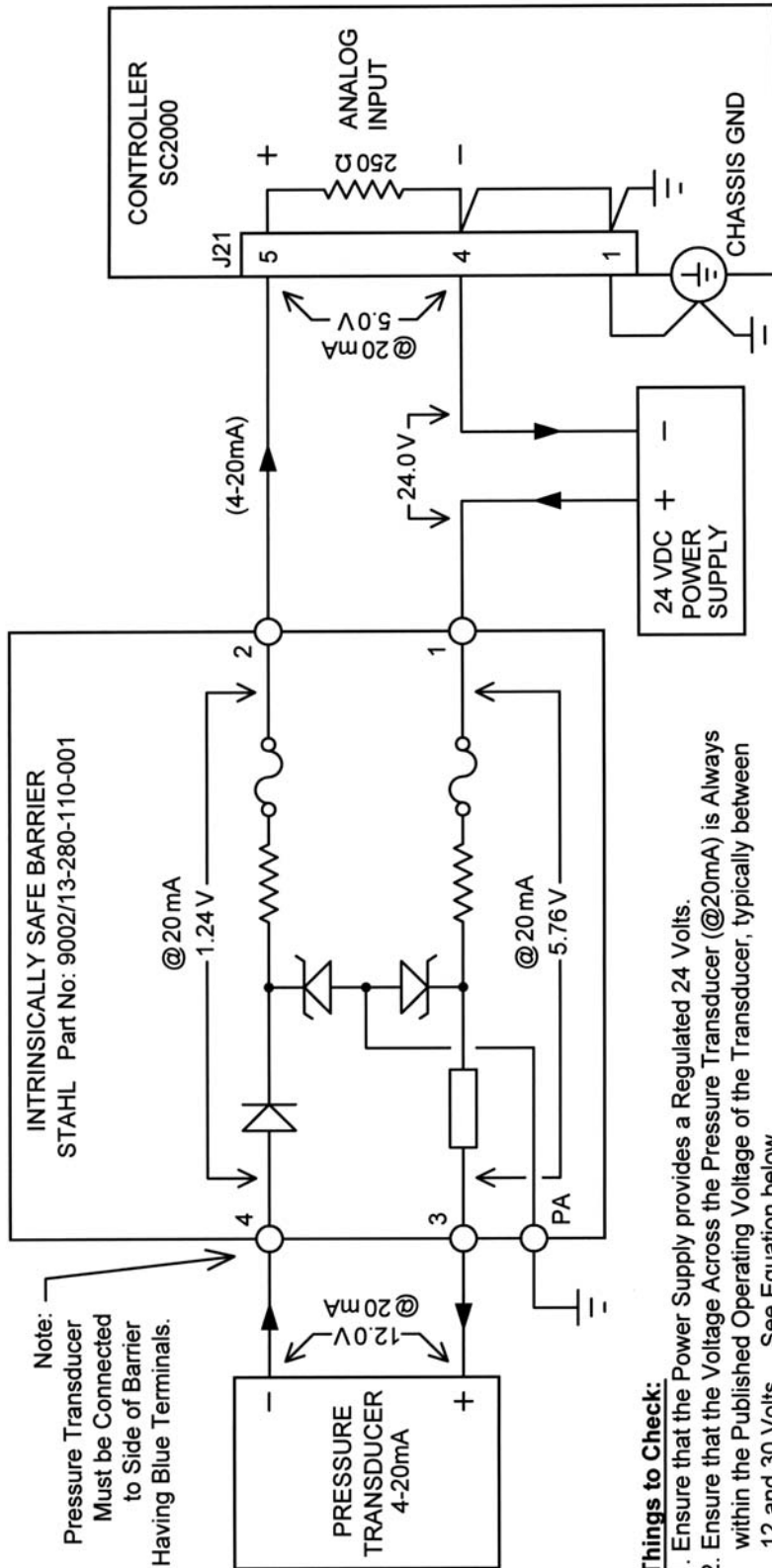




INTRINSICALLY SAFE BARRIER

For 4-20mA Analog Input

STAHL Part No: 9002/13-280-110-001



Note:
Pressure Transducer
Must be Connected
to Side of Barrier
Having Blue Terminals.

Things to Check:

1. Ensure that the Power Supply provides a Regulated 24 Volts.
2. Ensure that the Voltage Across the Pressure Transducer (@20mA) is Always within the Published Operating Voltage of the Transducer, typically between 12 and 30 Volts. See Equation below.
3. Ensure that the Current Flow Direction through the Barrier Circuit is Correct.

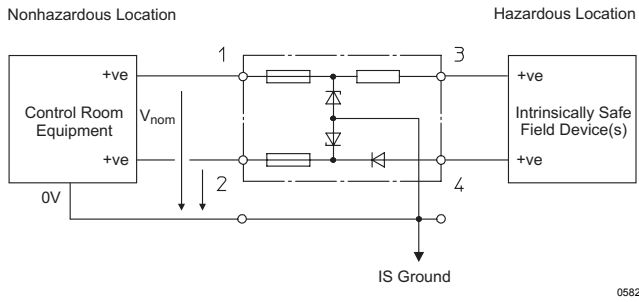
Voltage Across Transducer (@ 20mA) = (Power Supply Voltage) - (Voltage Dropped Across Analog Input) - (Voltage Dropped Across Barrier)

$$= (24.0V) - (5.0V) - (1.24V + 5.76V) = (7.0V)$$

Voltage Across Transducer (@ 20mA) = $(24.0V) - (5.0V) - (7.0V)$

= 12.0V Which is within the typical Published Operating Voltage of Between 12 and 30 Volts.

9002 Series, Dual Channel - Positive Polarity, Diode Return



- Diode return barrier for supply and return signals in one unit with very small entity current (I_{sc}) addition from the second channel
- Allows the connection of regulated power supplies, V_{nom} , as listed in the table below
- Various safety and operational characteristics as listed in the table below
- Approved for installation in Division 2 and Zone 2

Technical Tips

When two channels of one barrier are connected together to one field device with no isolation between the channels, the resultant entity parameters, V_T , I_T , P_O , and cable parameters, must be used and are as listed in row (a) for each barrier.

Not suitable for voltage signals or resistive sensors
 Maximum leakage current through channel 2 $\leq 10 \mu A$

FM / UL Information - Connections to Class I, II, III, Division 1 or Class I, Zone 0

Order Code	ch	Operational Characteristics					Entity Parameters			Gas Group Cable Parameters			
		V_{nom}	R_{min}	R_{max}	I_{max}	ΔV	V_{OC}	I_{sc}	P_O	A, B, E or IIC		C, D, F, G or IIB, IIA	
		V	Ω	Ω	mA	V	V	mA	W	L_a mH	C_a μF	L_a mH	C_a μF
9002/13-199-225-001	1	16	95	108	148	--	19.9	222	1.1	0.39	0.223	3.18	1.42
	2	16				2	19.9	3	0.015	1000	0.223	1000	1.42
	(a)	--					20.2	225	1.12	0.37	0.213	3.15	1.38
9002/13-280-093-001	1	24	321	358	67	--	28	90	0.63	2.2	0.083	14	0.65
	2	24				2	28	3	0.021	50	0.083	150	0.65
	(a)	--					28.3	93	0.651	2	0.08	13	0.636
9002/13-280-110-001	1	24	269	290	82	--	28	107	0.749	1.35	0.083	9.6	0.65
	2	24				2	28	3	0.021	50	0.083	150	0.65
	(a)	--					28.3	110	0.77	1.25	0.08	9	0.635

CSA Information - Connections to Class I, II, III, Division 1

Order Code	ch	Operational Characteristics					Entity Parameters			Gas Group Cable Parameters			
		V_{nom}	R_{min}	R_{max}	I_{max}	ΔV	V_{OC}	I_{sc}	P_O	A, B, E		C, D, F, G	
		V	Ω	Ω	mA	V	V	mA	W	L_a mH	C_a μF	L_a mH	C_a μF
9002/13-199-225-001	1	16	95	108	148	--	19.8	220.3	1.1	0.35	0.33	3.1	1.0
	2	16				2	8.6	0	0.015	1000	5.5	1000	16.5
	(a)	--					20.7	221	1.12	0.35	0.30	2.8	0.9
9002/13-280-093-001	1	24	321	358	67	--	28	91	0.63	4.4	0.14	17.2	0.43
	2	24				2	28	0	0.021	1000	0.14	1000	0.43
	(a)	--					30.4	91	0.651	4.4	0.1	17.2	0.3
9002/13-280-110-001	1	24	269	290	82	--	28	110	0.749	2.9	0.13	11.6	0.39
	2	24				2	28	0	0.021	1000	0.13	1000	0.39
	(a)	--					28.8	110	0.77	2.9	0.11	11.6	0.33