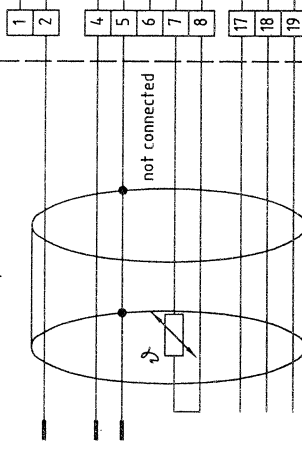


**Measurement Loop**  
**Hazardous Area Location**

IS Class I, Division 1, Groups A, B, C, D  
 IS Class II, Division 1, Groups E, F, G  
 IS Class III, Division 1  
 IS Class I, Zone 0, Group IIC



HACH pH/Temp Differential pH and ORP Sensors  
 Model Number PD \*\*\* and RD \*\*\*  
 Encapsulated Differential pH and ORP Sensors  
 Model Number 20 \*\*\*\* and 60 \*\*\*\*

pH-Measuring Loop  
 Entity Parameters: Terminals 1, 2, 4, 5, and 6  
 $V_i, U_o = 12\text{ V}; I_{t, I_o} = 16\text{ mA}; P_{max}, P_o = 29\text{ mW}$   
 Class I, Division 1, Groups A & B  
 $C_a, C_o = 1.41\text{ }\mu\text{F}; L_a, L_o = 150\text{ mH}$   
 Class I & II, Division 1, Groups C & E  
 $C_a, C_o = 9\text{ }\mu\text{F}; L_a, L_o = 600\text{ mH}$   
 Class I, II, III Division 1, Groups D, F & G  
 $C_a, C_o = 36\text{ }\mu\text{F}; L_a, L_o = 1\text{ H}$

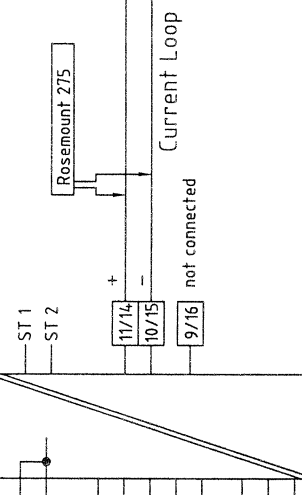
**Temp-Measuring Loop**

Entity Parameters: Terminals 7 and 8  
 $V_o, U_o = 7.14\text{ V}; I_{sc}, I_o = 4\text{ mA}; P_{max}, P_o = 8\text{ mW}$   
 Class I, Division 1, Groups A & B  
 $C_a, C_o = 13.5\text{ }\mu\text{F}; L_a, L_o = 1\text{ H}$   
 Class I & II, Division 1, Groups C & E  
 $C_a, C_o = 24.0\text{ }\mu\text{F}; L_a, L_o = 1\text{ H}$   
 Class I, II, III Division 1, Groups D, F & G  
 $C_a, C_o = 1000\text{ }\mu\text{F}; L_a, L_o = 1\text{ H}$

pH/Temp-Measuring Loop  
 Entity Parameters: Terminals 1, 2, 4, 5, 6, 7 and 8  
 $V_o, U_o = 12\text{ V}; I_{sc}, I_o = 20\text{ mA}; P_{max}, P_o = 36\text{ mW}$   
 Class I, Division 1, Groups A & B  
 $C_a, C_o = 1.1\text{ }\mu\text{F}; L_a, L_o = 100\text{ mH}$   
 Class I & II, Division 1, Groups C & E  
 $C_a, C_o = 9\text{ }\mu\text{F}; L_a, L_o = 350\text{ mH}$   
 Class I, II, III Division 1, Groups D, F & G  
 $C_a, C_o = 36\text{ }\mu\text{F}; L_a, L_o = 850\text{ mH}$

**Hazardous Location Class I, Div 1**  
**2-Wire Transmitter SI 792X P**

(intrinsically safe apparatus)  
 IS, AIS, Class I, Division 1, Groups A, B, C, D, T4, Entity, Type 2  
 AIS Class I, II, III, Division 1, Groups A, B, C, D, E, F, G  
 Class I, Zone 1 AEx ia [ia] IIC T6, Entity, Type 2  
 Tamb = 20 to +55 °C



Entity Parameters:  
 Terminals 10/15 and 11/14  
 $V_{max}, U_i = 30\text{ V}; C_i = 32.4\text{ nF}$   
 $I_{max}, I_i = 100\text{ mA}; L_i = 24.0\text{ }\mu\text{H}$   
 $P_{max}, P_i = 0.8\text{ W}$

**HAZARD LOCATION**

Suitable for CLASS I, DIV 2, GRP A, B, C, D, T4, when powered by  $V_o, V_i = 30\text{ V}; I_{sc}, I_t = 100\text{ mA}$   
 Substitution of components may impair intrinsic safety and the suitability for Class I, DIV 2  
 Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous

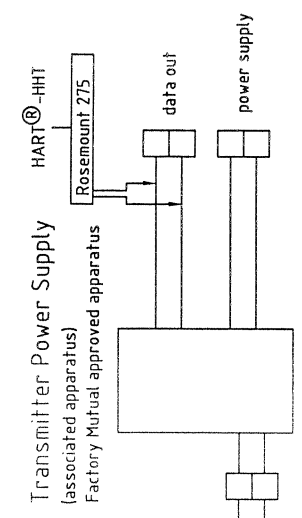
**Sensor-Supply**

Entity Parameters: Terminals 17, 18 and 19  
 $V_o, U_o = 12\text{ V}; I_{sc}, I_o = 14\text{ mA}; P_{max}, P_o = 20\text{ mW}$   
 Class I, Division 1, Groups A & B  
 $C_a, C_o = 1.41\text{ }\mu\text{F}; L_a, L_o = 150\text{ mH}$   
 Class I & II, Division 1, Groups C & E  
 $C_a, C_o = 9\text{ }\mu\text{F}; L_a, L_o = 700\text{ mH}$   
 Class I, II, III Division 1, Groups D, F & G  
 $C_a, C_o = 36\text{ }\mu\text{F}; L_a, L_o = 1\text{ H}$

**pH/Temp Measuring Loop and Sensor-Supply**

Entity Parameters:  
 Terminals 1, 2, 4, 5, 6, 7, 8, 17, 18 and 19  
 $V_o, U_o = 12\text{ V}; I_{sc}, I_o = 25\text{ mA}; P_{max}, P_o = 44\text{ mW}$   
 Class I, Division 1, Groups A & B  
 $C_a, C_o = 1.07\text{ }\mu\text{F}; L_a, L_o = 60\text{ mH}$   
 Class I & II, Division 1, Groups C & E  
 $C_a, C_o = 9\text{ }\mu\text{F}; L_a, L_o = 210\text{ mH}$   
 Class I, II, III Division 1, Groups D, F & G  
 $C_a, C_o = 36\text{ }\mu\text{F}; L_a, L_o = 450\text{ mH}$

**Non-Hazardous Location**



**NOTES:**

- $V_{max}, U_i > V_o, V_i$ , or  $U_o$   
 $I_{max}, I_i > I_{sc}, I_t$ , or  $I_o$   
 $C_i + C_{cable} < C_a$  or  $C_o$   
 $P_{max} > P_o$   
 $L_i + L_{cable} < L_a$  or  $L_o$
- Installation must be in accordance with the National Electrical Code
- Associated apparatus must be FMRC Approved and must be used in an FMRC Approved configuration. Use of the Rosemount Model 275 Communicator in Zones is not an FMRC Approved configuration. The control drawing for the associated apparatus must be followed when installing this equipment.
- Control equipment connected to the associated apparatus must not use or generate more than 250 V.
- The intrinsically safe equipment connecting to 1, 2, 4, 5, 6 and 7, 8 must be FMRC Approved or be simple apparatus (a device which will neither generate nor store more than 1.2 V, 0.1 A, 25 mW or 20 mJ). The intrinsically safe equipment connecting to 17, 18 and 19 must be FMRC Approved.
- No revisions to drawing without prior FMRC Approval.
- Use of the Rosemount Model 275 Communicator is FM Approved for Division use only, see note 3. When using the Rosemount Model 275 Communicator in the loop between the associated apparatus and the SI 792X P 2-Wire Transmitter, the maximum loop inductance must be less than the marked  $L_a$  of the associated apparatus to account for the  $I_{sc}$  from the Model 275 Communicator. Refer to the Rosemount Installation Drawing 00275-0081 to determine the allowable loop inductance.

**HACH**

Verfasser: FUL (2x)	Zul. Abweichungen für Maße ohne Toleranzangabe ISO 2768 - m	Oberfläche Metzbezug	MeiBstab
Nr. AE	Datum	Beauftragter	FUL KON
19	06.12.06	Name	19.12.06
	06.12.06	Datum	06.12.06
		Bezeichnung	control drawing FM SI 792X P
		Zeichnungsnummer	194.120-270
		Ungültig ab:	Ersetzt durch: