

Control drawings for installations in hazardous locations that conform to US and Canadian standards

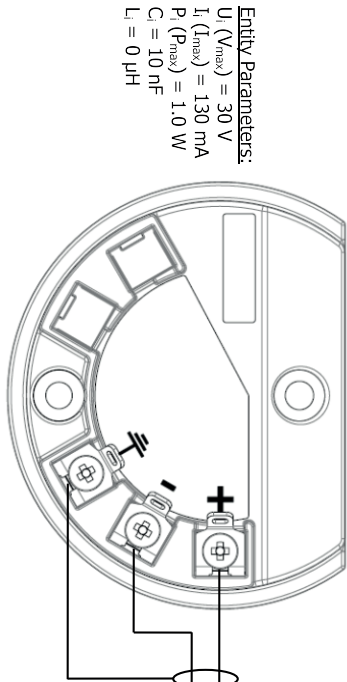


Last update: 01 February 2019

HAZARDOUS (CLASSIFIED) LOCATION

Class I/II/III, Div 1, GPS ABCDEFG
Class I, Zone 0, IIC
Zone 20, IIIC

**NON HAZARDOUS
(UNCLASSIFIED) LOCATION**



Entity Parameters:
 $U_i (V_{max}) = 30 \text{ V}$
 $I_i (I_{max}) = 130 \text{ mA}$
 $P_i (P_{max}) = 1.0 \text{ W}$
 $C_i = 10 \text{ nF}$
 $L_i = 0 \text{ }\mu\text{H}$

**CONNECTIONS FOR ENTITY CONCEPT
OF 2 WIRES / 4...20 mA HART VERSION**

Notes:

- 1) Installation shall be in accordance with ANSI / ISA-RP 12.06.01, "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S., and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
- 2) No revision to this drawing without prior agency approval.
- 3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C
- 4) To determine proper matching of I.S. equipment and the maximum cable length use the following entity parameter matching formulas:
 $U_0 (V_{oc}) \leq U_i (V_{max})$
 $I_0 (I_{sc}) \leq I_i \text{ or } (I_{max})$
 $P_0 \leq P_i (P_{max})$
 $C_0 (C_a) \geq \Sigma C_i + C_{cable}$
 $L_0 (L_a) \geq \Sigma L_i + L_{cable}$
- 5) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.
- 6) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
- 7) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
- 8) Avoid electrostatic charge of the plastic sun cover, the hygienic antenna, the drop antenna, the flange plate protection, the extension protection and the slanted flange (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).
- 9) Temperature Classes as a function of ambient temperature and process temperature (or process connection temperature) - see tables

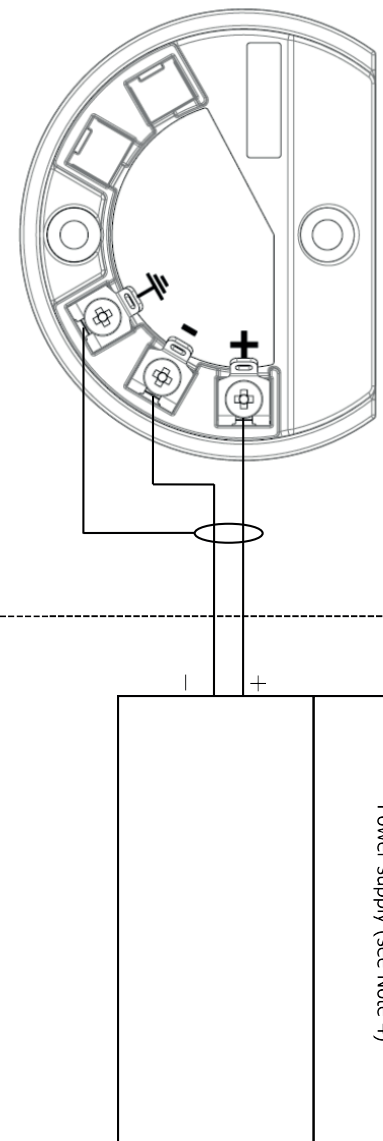
**FOR FURTHER LIMITATIONS
SEE INSTRUCTION MANUAL**

**WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE**

Rev	Mod	Nom	Cont	Norm	Homol.
	EMS-009638				
Engineer			General Tolerances		
Prod	ATH		12/17/2018	Edge of parts	Sensible Ex
Cont	VPI		12/17/2018	Surface condition	
Norm				Material	
Homol.	ATH		12/17/2018		Ech Folio 1/1
 DREXELBROOK			CONTROL DRAWING DR5400/DR6400/DR7400 IS/Ex ia/AEx ia		
			Code d'article	Doc. type	Doc. key
				APPR	4007321101
			Status	released	Rev -

NON HAZARDOUS
(UNCLASSIFIED) LOCATION

Power supply (see Note 4)



CONNECTIONS OF 2 WIRES / 4...20 mA HART VERSION

**FOR FURTHER LIMITATIONS
SEE INSTRUCTION MANUAL**

Temperature class	Max. surface temperature	Min. ambient temperature	Min. process temperature
All classes	All surface temperatures	-33°C	-50°C
		-40°C	-40°C

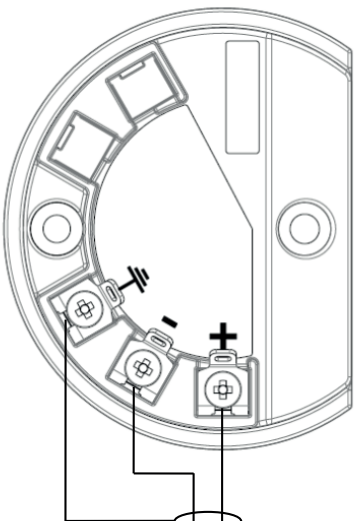
Temperature class	Max. surface temperature	Min. ambient temperature	Min. process temperature
All classes	All surface temperatures	-40°C	-40°C
		-37°C	-50°C

Functional Ratings:
 $V_{nom.} = 16\text{--}36\text{ V}$; $I_{nom.} = 4\text{--}20\text{ mA}$ or $3.8\text{--}20.5\text{ mA}$, error 3.5 mA or 21.5 mA
 These ratings do not supersede hazardous locations values.

Rev	Mod	Norm	Cont	Norm	Homol.
	EMS-009638				
Engineer			General Tolerances		
Prod	ATH	12/17/2018	Edge of parts	Sensible Ex	
Cont	VPI	12/17/2018	Surface condition		
Norm			Material		
Homol.	ATH	12/17/2018			
CONTROL DRAWING			Code d'article		
DR5400/DR6400/DR7400			Doc. type Doc. key		
XP-IS/DIP/Ex db ia/Ex ia tb/			APPR 4007321601		
AEx db ia/AEx ia tb			Status released		

HAZARDOUS (CLASSIFIED) LOCATION

Class I/II/III, Div 2, GPS ABCDFG

**NON HAZARDOUS
(UNCLASSIFIED) LOCATION**

Power supply (see Note 4)

**CONNECTIONS FOR NON INCENDIVE CONCEPT
OF 2 WIRES / 4...20 mA HART VERSION****Notes:**

- 1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
- 2) No revision to this drawing without prior agency approval.
- 3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C
- 4) Intrinsic safety barrier not required. See functional ratings.
- 5) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
- 6) For class II, III, use a dust tight seal at the conduit entry.
- 7) Avoid electrostatic charge of the plastic sun cover, the hygienic antenna, the drop antenna, the flange plate protection, the extension protection and the slanted flange (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).
- 8) Temperature Classes as a function of ambient temperature and process temperature (or process connection temperature) - see tables

Functional Ratings:

$V_{nom} = 12-30\text{ V}$; $I_{nom} = 4-20\text{ mA}$ or $3.8-20.5\text{mA}$, error 3.5 mA or 21.5 mA

**FOR FURTHER LIMITATIONS
SEE INSTRUCTION MANUAL****DR5400 – DR6400**

Temperature class	Max. surface temperature	Max. ambient temperature	Max. process temperature
T6	T85°C	+60°C	+60°C
		+44°C	+85°C
T5	T100°C	+75°C	+75°C
		+59°C	+100°C
T4	T130°C	+57°C	+115°C
		+48°C	+130°C

Temperature class	Max. surface temperature	Min. ambient temperature	Min. process temperature
All classes	All surface temperatures	-40°C	-40°C
		-33°C	-50°C

DR7400

Temperature class	Max. surface temperature	Max. ambient temperature	Max. process temperature
T6	T85°C	+60°C	+60°C
		+54°C	+85°C
T5	T100°C	+75°C	+75°C
		+69°C	+100°C
T4	T135°C	+72°C	+115°C
		+68°C	+130°C
T3	T200°C	+64°C	+150°C
		+58°C	+180°C
		+54°C	+200°C

Temperature class	Max. surface temperature	Min. ambient temperature	Min. process temperature
All classes	All surface temperatures	-40°C	-40°C
		-37°C	-50°C

The gasket and antenna material temperatures must be in the approved limits.
For more data, refer to the handbook.

WARNING: EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2

AVERTISSEMENT: RISQUE D'EXPLOSION. AVANT DE DEBRANCHER L'EQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L'EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2

Rev	Mod	Norm	Cont	Norm	Homol.
	EMS-009638				
Engineer			General Tolerances		
Prod	ATH	12/17/2018	Edge of parts		
Cont	VPI	12/17/2018	Surface condition		
Norm			Material		
Homol.	ATH	12/17/2018	Sensible Ex		
CONTROL DRAWING			Code d'article		
DR5400/DR6400/DR7400			Doc. type Doc. key		
NON INCENDIVE			APPR 4007321801		
			Status released		
			Rev		
			Ech		
			Folio 1/1		







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