

ANALOG OUTPUT PROXIMITY SENSORS



NON-HAZARDOUS LOCATION

HAZARDOUS (CLASSIFIED) LOCATION
Class I, Div. 1, Groups A, B, C, D

Associated Apparatus
with Entity Concept
parameters as follows:

$$U_{oc} \text{ (or } V_t) \leq U_i$$

$$I_{sc} \text{ (or } I_t) \leq I_i$$

$$C_o \geq C_{cable} + C_i$$

$$L_o \geq L_{cable} + L_i$$

Proximity Sensor Models:

Bi 8-M18-Li/Exi

Bi 8-M18-Li/Exi/S97

$$U_i = 30V, I_i = 120mA, C_i = 0nF, L_i = 86uH,$$

$$P_i = 900mW; T_a = 70C; T_4$$

Bi15-M30-Li/Exi

Bi15-M30-Li/Exi/S97

$$U_i = 30V, I_i = 120mA, C_i = 0nF, L_i = 170uH,$$

$$P_i = 900mW; T_a = 70C; T_4$$

Notes:

- The Entity Concept allows the interconnection of intrinsically safe and associated apparatus not specifically examined in combination as a system when the following conditions are met:
Selected associated apparatus must be third party listed as providing intrinsically safe circuit for the application.

I.S Equipment		Associated Apparatus
U_i	$\geq$	$U_{oc} \text{ or } V_t$
I_i	$\geq$	$I_{sc} \text{ or } I_t$
P_i	$\geq$	P_o
$C_i + C_{cable}$	$\leq$	C_o
$L_i + L_{cable}$	$\leq$	L_o

- Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations. Cable capacitance, C_{cable} , plus capacitance, C_i must be less than the marked capacitance, C_o , shown on any associated apparatus used. The same applies for inductance (L_{cable} , L_i and L_o , respectively. Where the cable capacitive and inductance per foot are not known, the following values shall be used: $C_{cable} = 60 \text{ pF/ft}$, $L_{cable} = 0.2 \text{ uH/ft}$.
- Wiring methods must be in accordance with the National Electrical Code, ANSI/NFPA 70, Article 504, and ANSI/ISA RP 12.6.
- Associated apparatus must be installed per its manufacturers control drawing.
- Associated apparatus must not be used in combination unless permitted by the associated apparatus certification.
- Maximum Non-Hazardous Location Voltage is 250VAC/VDC.
- WARNING – Substitution of components may impair Intrinsic Safety.
- WARNING – To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

Drawing No.:

IS-3.100

TURCK

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Title: Installation of Intrinsically Safe Systems:
Analog Output Proximity Sensors
Bi 8-M18-Li/Exi and Bi15-M30-Li/Exi

Scale: NONE

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B	Add /S97 version	TKM		1/24/23
Rev	Description	Drft	Chk	Date