

FM Approved Isolator Barriers

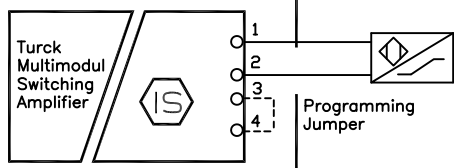
Discrete Input Devices with Intrinsically Safe Field Circuits



NON-HAZARDOUS LOCATION
or
Class I, Division 2, Groups A,B,C,D

HAZARDOUS (CLASSIFIED) LOCATION
Class I, Div. 1, Groups A,B,C,D; Class II, Div. 1, Groups E,F,G; Class III, Div. 1
or
Class I, Zone 0, 1 or 2, Group IIC, IIB, or IIA

MK13-P-Ex0/24VDC/K15



Entity Parameters: Class I, Division 1; Class II, Division 1; Class III, Division 1

Model	Terminals	V _{oc} (V)	I _{sc} (mA)	P _o (mW)	C _a (uF) AB/CE/DFG	L _a (mH) AB/CE/DFG
MK13-P-Ex0/24VDC/K15	1-2	9.6	19.4	46.6	3.6/26/210	82/296/700

Entity Parameters: Class I, Zone 0, 1, or 2

Model	Terminals	U _o (V)	I _o (mA)	P _o (mW)	C _o (uF) IIC/IIB/IIA	L _o (mH) IIC/IIB/IIA
MK13-P-Ex0/24VDC/K15	1-2	9.6	19.4	46.6	3.6/26/210	82/296/700

Notes:

1. The symbol  designates any of the following:

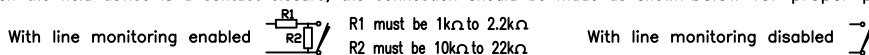
- For US jurisdictions - Any FM approved intrinsically safe apparatus with Entity Concept parameters, or any simple apparatus.
- For Canadian jurisdictions - Any Canadian certified intrinsically safe apparatus with Entity Concept parameters, or any simple apparatus.

The Entity concept allows interconnection of intrinsically safe apparatus and associated apparatus not specifically examined in such combination as a system when the conditions above are met.

$$\begin{aligned} V_{max} &\geq V_{oc} \text{ or } V_t & I_{max} &\geq I_{sc} \text{ or } I_t & U_i &\geq U_o & I &\geq I_o & P_i &\geq P_o \\ C_i + C_{cable} &\leq C_a & L_i + L_{cable} &\leq L_a & C_i + C_{cable} &\leq C_o & L_i + L_{cable} &\leq L_o \end{aligned}$$

A simple apparatus is defined as an electrical component or combination of components of simple construction with well-defined electrical parameters that does not generate more than 1.5V, 100mA, and 25mW, or a passive component that does not dissipate more than 1.3W and is compatible with the intrinsic safety of the circuit in which it is used.

2. When the field device is a contact closure, the connection should be made as shown below for proper performance.



3. Wiring methods must be in accordance with:

For US jurisdictions - the National Electrical Code, ANSI/NFPA 70, Article 504 (for Division 1 or 2 installations) or Article 505 (for Zone 0, 1 or 2 applications), and ANSI/ISA RP12.06.01.

For Canadian jurisdictions - the Canadian Electrical Code, CSA 22.1, for Division 1 or 2, or Zone 0, 1, or 2 installations.

4. Associated apparatus must not be connected to any device that uses or generates in excess of 250V rms or dc unless it has been determined that the voltage is adequately isolated from the apparatus.
5. The isolators must be installed in a suitable equipment enclosure meeting the requirements of ANSI/ISA S82.02.01 or in compliance with the enclosure, mounting, spacing, and segregation requirements of the ultimate application.
6. If the electrical parameters of the cable are unknown, the following values may be used:
Capacitance - 60pF/foot
Inductance - 0.2uH/foot
7. WARNING: EXPLOSION HAZARD - Do not connect/disconnect while circuit is live unless area is known to be nonhazardous.
AVERTISSEMENT: RISQUE D'EXPLOSION - Ne pas connecter/déconnecter lorsque le circuit est sous tension sauf si la zone est connue pour être non dangereux.
8. WARNING: EXPLOSION HAZARD - Substitution of components may impair intrinsic safety or suitability for Class I, Division 2.
AVERTISSEMENT: RISQUE D'EXPLOSION - La substitution de composants peut compromettre la sécurité intrinsèque ou la conformité de Classe I, Division 2.

Drawing No.:

IS-1.110

TURCK
3000 Campus Drive
Plymouth, MN 55441
Phone: (763) 553-7300

Title: Control Drawing for
MK13-P-Ex0/24VDC/K15 with I/S
(Entity) field circuits

Scale: None

Sheet 1 of 1

Rev	Description	Drft	Date
C	Reactivate for MK13-P-Ex0/24VDC/K15	BVL	8/13/15
B	Correct P _o from 466 to 46.6	BVL	11/16/06
A	Release	BVL	1/11/06