

INTRINSICALLY SAFE SINGLE & MULTIPLE CHANNEL INPUTS

Hazardous locations are classified by the National Electrical Code according to the level of hazard that may exist in the area. A hazardous location is designated by its class, group and division.

Class and group specify the type of hazardous substance that may exist in the classified location. The division indicates the conditions under which the hazardous substance may be present.



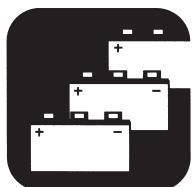
CLASS I

Locations in which flammable gases or vapors may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.



GROUP A

Atmospheres containing acetylene.



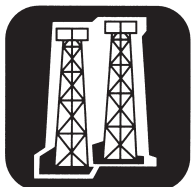
GROUP B

Atmospheres containing hydrogen, gases or vapors of equivalent hazard, such as manufactured gas.



GROUP C

Atmospheres containing ethyl-ether vapors, ethylene or cyclopropane.



GROUP D

Atmospheres containing gasoline, hexane, naphtha, benzene, butane, propane, alcohol, acetone, benzol, lacquer solvent vapors or natural gas.



DIVISION I

Locations in which hazardous concentrations in the air exist continuously, intermittently or periodically under normal operating conditions.



CLASS II

Locations which are hazardous because of the presence of combustible dust.



GROUP E

Atmospheres containing metal dust including aluminum, magnesium and their commercial alloys and other metals of similarly hazardous characteristics.



GROUP F

Atmospheres containing carbon black, coal or coke dust.



GROUP G

Atmospheres containing flour, starch or grain dusts.



CLASS III

Locations which are hazardous because of the presence of easily ignitable fibers or flyings, but in which such fibers or flyings are not likely to be in suspension in air in quantities sufficient to produce ignitable mixtures.



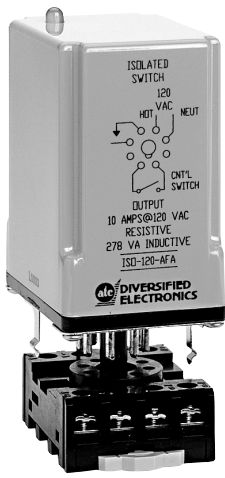
DIVISION II

Locations in which hazardous concentrations are handled, processed or used but are normally confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown.



Process Control
Equipment for
Hazardous Locations
7M26
UL913

The ATC Diversified Electronics series of Isolated Switches have been tested and approved for listing under Underwriters Laboratories (UL) UL913 Intrinsically Safe Apparatus and Associated Apparatus. The input(s) to these switches have been approved for use in all classes, groups and divisions of hazardous locations.



Process Control Equipment
for Hazardous Locations
7M26
UL913



Single Channel Isolated Switch

SPECIFICATIONS

CONTROL VOLTAGE	24 or 120 VAC ±10%, 50/60 Hz	
CONTROL SWITCH	Open Circuit Voltage	16 VDC
	Open Circuit Voltage	200 µAmps
RESPONSE	Operate	6 mSEC (Approx.)
	Release	2.5 mSEC (Approx.)
POWER REQUIRED	1.5 VA	
DUTY CYCLE	Continuous	
CONTACT RATING	SPST-N.O., 5 amps @ 24 or 120 VAC, Resistive; 278 VA, inductive	
SENSITIVITY	100 k ohm	
ISOLATION	2500 Volts, Input to Output	
LIFE EXPECTANCY	Mechanical	20 Million Operations
	Electrical	50,000 Operations @ Rated Load
INDICATORS	On When Output is On	
TEMPERATURE RATING	Operate	-4° to 131°F (-20° to +55°C)
	Storage	-40° to 185°F (-40° to +85°C)
ENCLOSURE	Style "E" Lexan® Surface Mounted	
TERMINATIONS	(12) #8-32 Screw terminals	
WEIGHT	20 oz.	

ORDERING INFORMATION

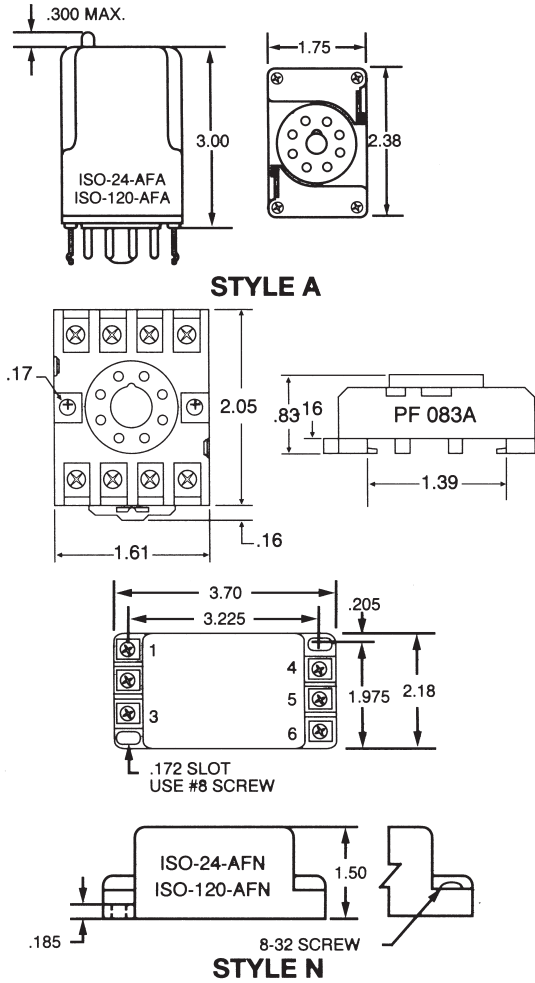
MODEL NUMBER	CONTROL VOLTAGE	ENCLOSURE STYLE
ISO-24-AFA	24 VAC	A
ISO-120-AFA	120 VAC	A
ISO-24-AFN	24 VAC	N
ISO-120-AFN	120 VAC	N

Style "A" Socket Included

OPERATION

The ISO Series single channel devices are used to provide a safe and reliable means of controlling loads from hazardous locations without releasing sufficient energy, under normal or abnormal conditions, to cause ignition of a flammable or combustible atmospheric mixture while in its most easily ignited concentration. An isolated output turns on when the control switch input from the hazardous location is closed. When the control switch input opens, the isolated output turns off. The Style A single channel plug-in devices come equipped with integral spring mating clips which secure the device to the base make this unit the only UL913 Intrinsically Safe plug-in associated apparatus available on the market today. The Style N, surface mounted enclosure is sealed with a high quality epoxy resin material and has five (5) #8-32 screw terminals.

DIMENSIONS (INCHES)

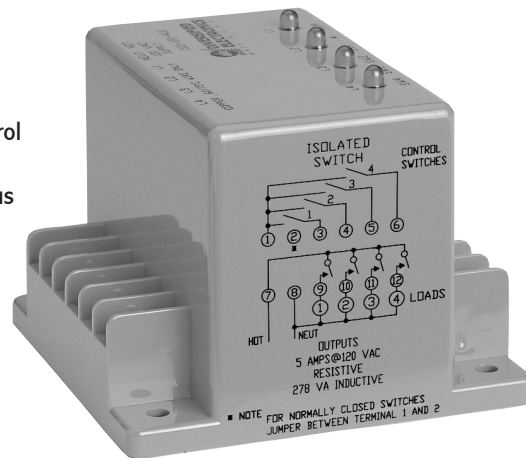


OPERATION

The ISO/ISL Series multiple channel devices are used to provide a safe and reliable means of controlling loads from hazardous locations without releasing sufficient energy under normal or abnormal conditions to cause ignition of a flammable or combustible atmospheric mixture while in its most easily ignited concentration. An isolated output turns on when the corresponding control switch input from the hazardous location is activated. When using normally closed control switch inputs, a jumper should be installed between terminals 1 and 2. Normally open control switch inputs do not require the optional jumper. When the **non-latching ISO Series** control switch input is activated, its corresponding output turns on. When the control switch input is deactivated, its output turns off. When the **latching ISL Series** control switch input 2, 3 or 4 is activated, its corresponding output turns on. When control switch 2, 3 or 4 is deactivated, its corresponding output remains latched on as long as control switch input 1 is activated; otherwise it turns off immediately. Control switch input 1 also controls output 1 just as in the non-latching ISO Series.

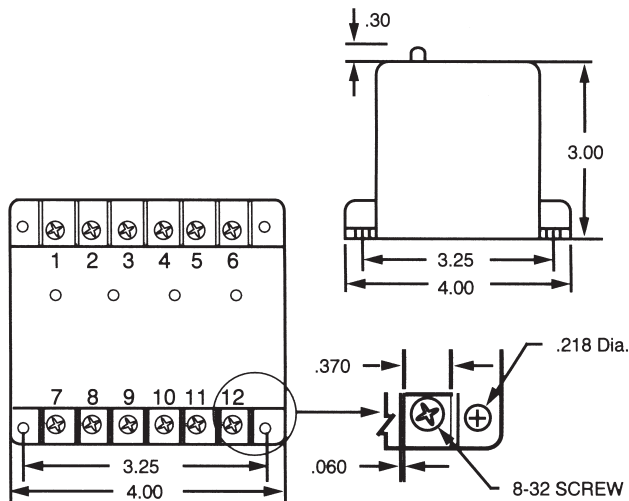


Process Control Equipment for Hazardous Locations
7M26
UL913



Multiple Channel Isolated Switch

DIMENSIONS (INCHES)



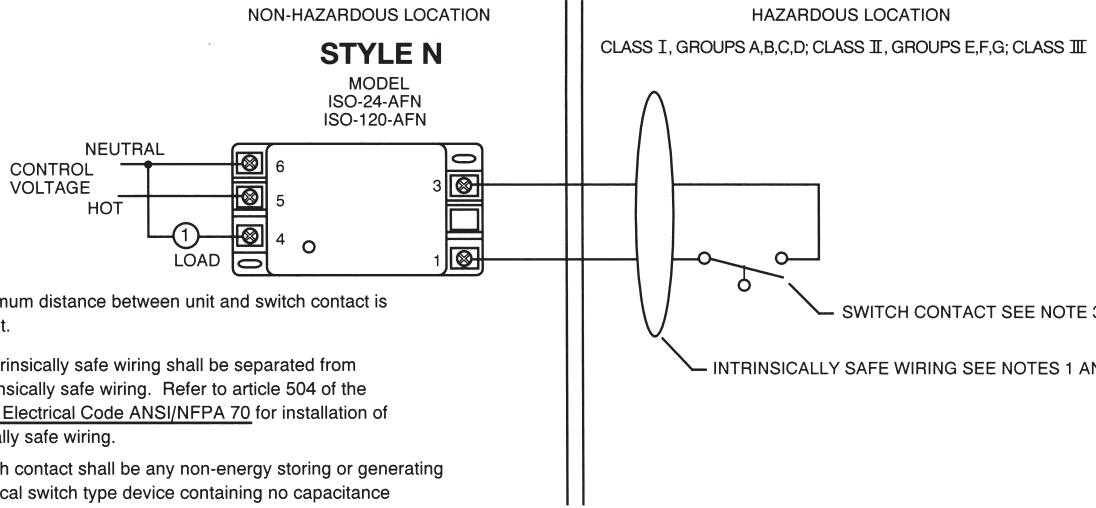
SPECIFICATIONS

CONTROL VOLTAGE	24 or 120 VAC ±10%, 50/60 Hz	
CONTROL SWITCH	Open Circuit Voltage	6.2 VDC
	Open Circuit Voltage	10 µAmps
RESPONSE TIMES	Operate	6 mSEC (Approx.)
	Release	2.5 mSEC (Approx.)
POWER REQUIRED	2.5 VA	
DUTY CYCLE	Continuous	
CONTACT RATING	SPST-N.O., 5 amps per channel @ 24 or 120 VAC, Resistive; 278 VA, Inductive	
ISOLATION	2500 Volts, Input to Output	
LIFE EXPECTANCY	Mechanical	20 Million Operations
	Electrical	50,000 Operations @ Rated Load
INDICATORS	On When Corresponding Output is On	
TEMPERATURE RATING	Operate	-4° to 131°F (-20° to +55°C)
	Storage	-40° to 185°F (-40° to +85°C)
ENCLOSURE	Style "E" Lexan® Surface Mounted	
TERMINATIONS	(12) #8-32 Screw terminals	
WEIGHT	8 oz.	

ORDERING INFORMATION

MODEL NUMBER	CONTROL VOLTAGE	CHANNELS
ISL-24-AAE	24 VAC	2
ISL-24-ABE	24 VAC	3
ISL-24-ACE	24 VAC	4
ISL-120-AAE	120 VAC	2
ISL-120-ABE	120 VAC	3
ISL-120-ACE	120 VAC	4
ISO-24-AAE	24 VAC	2
ISO-24-ABE	24 VAC	3
ISO-24-ACE	24 VAC	4
ISO-120-AAE	120 VAC	2
ISO-120-ABE	120 VAC	3
ISO-120-ACE	120 VAC	4

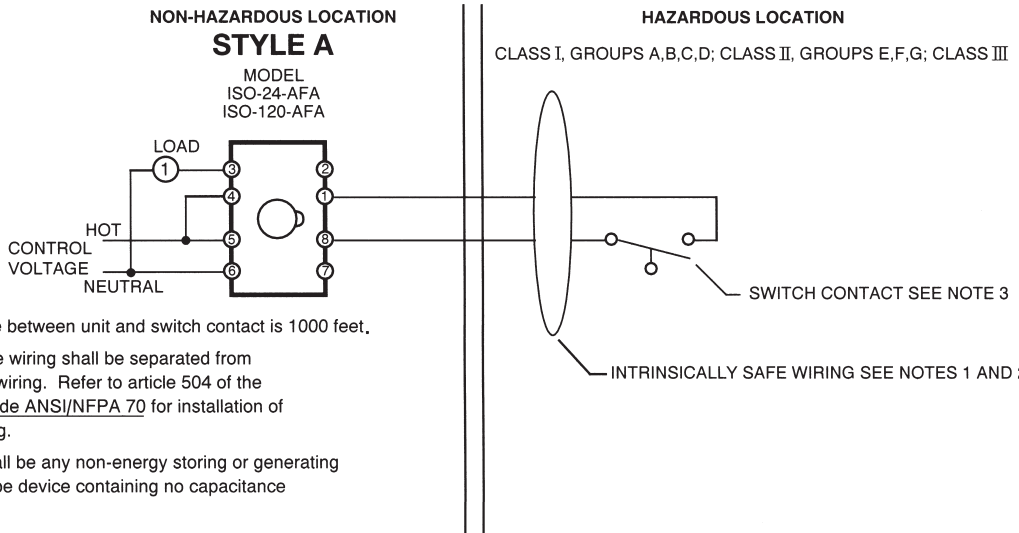
CONTROL DRAWING 191



NOTES:

1. Maximum distance between unit and switch contact is 1000 feet.
2. All intrinsically safe wiring shall be separated from non-intrinsically safe wiring. Refer to article 504 of the National Electrical Code ANSI/NFPA 70 for installation of intrinsically safe wiring.
3. Switch contact shall be any non-energy storing or generating mechanical switch type device containing no capacitance or inductance.

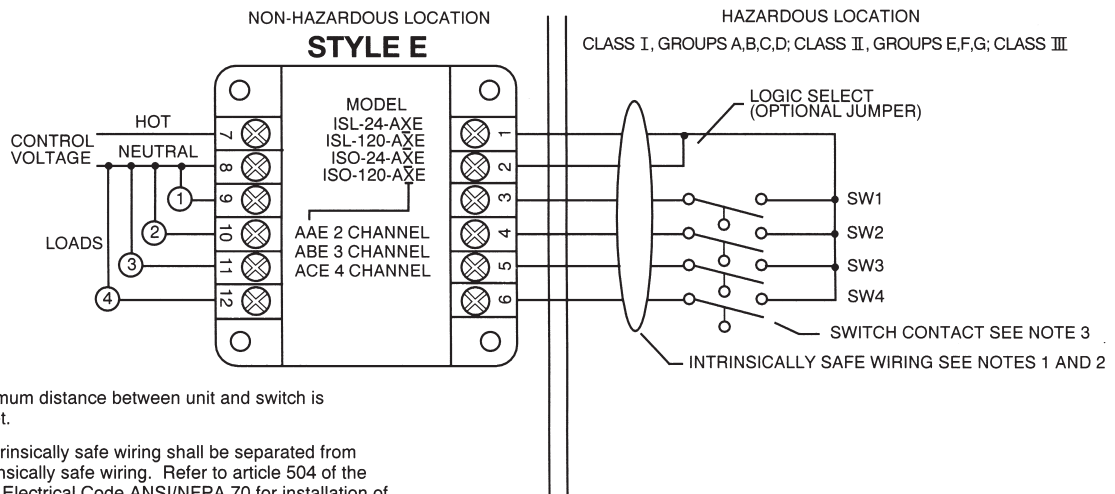
CONTROL DRAWING 192



NOTES:

1. Maximum distance between unit and switch contact is 1000 feet.
2. All intrinsically safe wiring shall be separated from non-intrinsically safe wiring. Refer to article 504 of the National Electrical Code ANSI/NFPA 70 for installation of intrinsically safe wiring.
3. Switch contact shall be any non-energy storing or generating mechanical switch type device containing no capacitance or inductance.
4. Unit must be installed with DE socket P/N PF083A.

CONTROL DRAWING 193



NOTES:

1. Maximum distance between unit and switch is 1000 feet.
2. All intrinsically safe wiring shall be separated from non-intrinsically safe wiring. Refer to article 504 of the National Electrical Code ANSI/NFPA 70 for installation of intrinsically safe wiring.
3. Switch contact shall be any non-energy storing or generating mechanical switch type device containing no capacitance or inductance.

4. Wiring to terminals 5,6,11 and 12 is omitted for models with the suffix AAE.
5. Wiring to terminals 6 and 12 is omitted for models with the suffix ABE.