

Intrinsic Safety Barrier



This Galvanically Isolated Electronic Module is the perfect complement to BEI's Intrinsically Safe Encoders. Together with our cable assemblies they constitute a completely engineered solution for encoder operation in Class I and Class II, Division I and Division II Hazardous Environments. This single barrier provides both power and signal isolation for an incremental encoder with differential quadrature outputs and an index. This all-in-one approach saves the cost, inconvenience and system design time needed when using separate power and signal barriers. This barrier is galvanically isolated and saves the added cost of maintaining a high integrity earth ground. With differential line driver outputs, this barrier can be used to carry signals up to 500 feet with a bandwidth of up to 250 kHz.

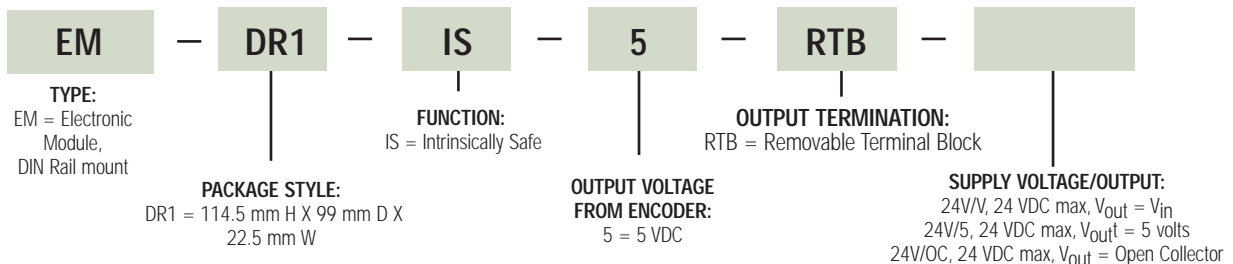
The Intrinsic Safety Barrier Module is designed around a standard DIN Rail mounting (Type EN 50 022, 35 mm X 7.5 mm) for easy installation in standard enclosures. The barrier has a non-incendive rating and can be installed in Class I, Division II areas.

Intrinsic Safety Barrier Specifications					
POWER SUPPLY/OUTPUT TYPE					
Part Number:	Barrier Supply Vs +/-5%	Output logic to Non-Hazardous Area Apparatus:			
924-60004-002	12-24 Volts	V _{out} = 5V		Line Driver 100mA Source/Sink (TTL & RS422 Compatible)	
924-60004-003	12-24 Volts	V _{out} = V _{in} (Nominal)		Line Driver 100mA Source/Sink	
924-60004-004	12-24 Volts	Open Collector		NPN 80mA Sink	
BARRIER PARAMETERS					
Voltage Supply	Voc (I _o) Isc (I _o)	Class I, Group D Class II, Groups E, F, G Group IIA		Class I, Group C Group IIB	Class I, Groups A, B Group IIC
+5V DC±5%	8.9V 345mA	Ca(Co) 560 µF	La(I _o) 2.0 mH	Ca(Co) La(I _o) 40 µF 0.80 mH	Ca(Co) La(I _o) 5.2 µF 0.4 mH
Input To Barrier From Encoder					
Signals	A, B, Z, \bar{A} , \bar{B} , \bar{Z} (Differential or A,B,Z, single-ended)				
Input Signal Impedance	500 Ohms nominal (A to \bar{A} , B to \bar{B} , Z to \bar{Z})				
Input Signal Level	4V _{DC} nominal, 6V _{DC} maximum				

Intrinsic Safety Barrier Ordering Options for assistance call 800-350-2727

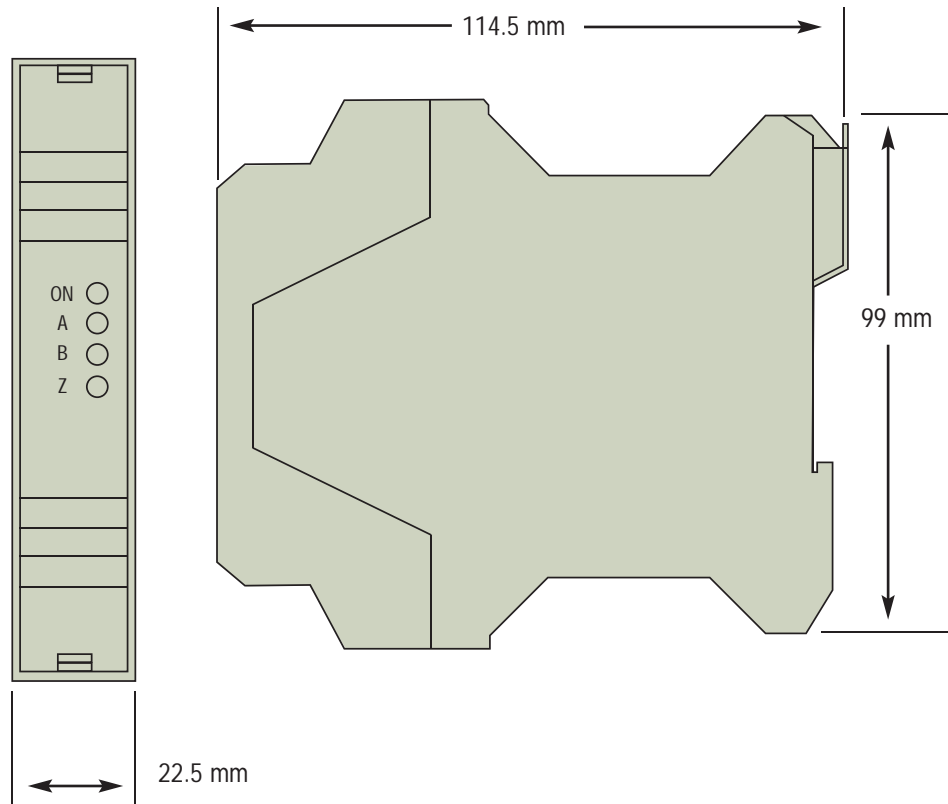
Use this diagram, working from left to right to construct your model number (example: EM-DR1-IS-5-RTB-24V/V).

All notes and tables referred to can be found on pages 64-65.

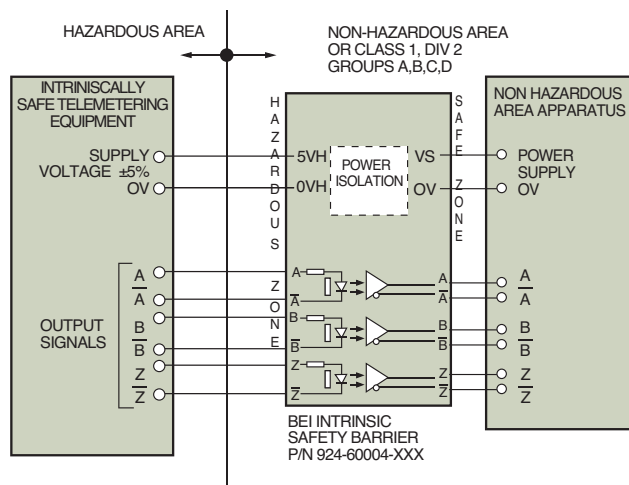


Intrinsic Safety Barrier

Dimensions



Specifications



Note: This system diagram is for general information only. Installation must be consistent with BEI Installation Drawing 924-08067-001.

Certifications

The BEI Intrinsic Safety Barrier has the following certifications allowing intrinsically safe encoders to be installed in the following hazardous locations consistent with the encoder specifications:

EN 55011 and EN 61000-6-2

U.S. Standards Class I, Group A,B,C & D; Class II Group E, F & G

CENELEC/ATEX EEX ia IIC T4

Canadian Standards Class I, Zone 0, Group IIC