

Read carefully before installing or testing the Hazardous location M321 Pickup:

M321 is a blind end, intrinsically safe and/or encapsulated magnetic pickup can be mounted in hazardous area as shown in figure 1.

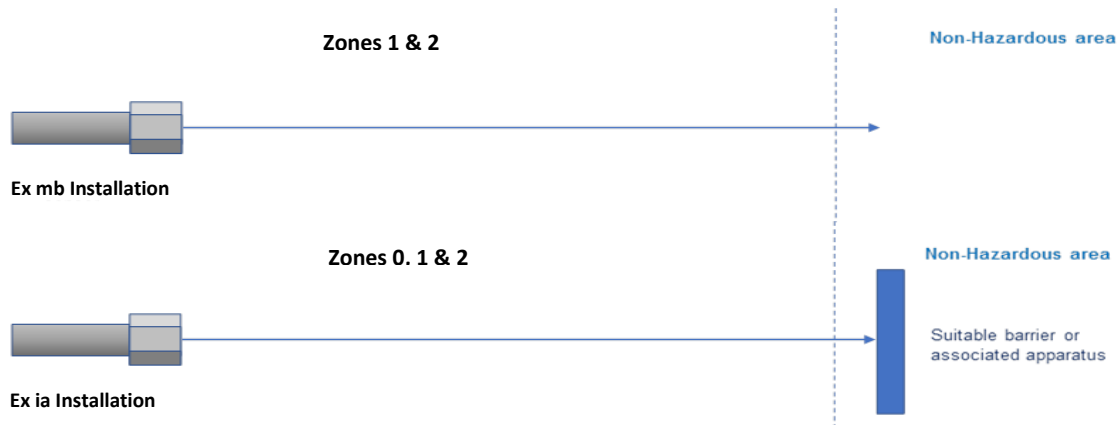


Figure1: Hazardous area – safe area layout

Specifications: (Refer to drawing number #800-0321 for more details.)

- **Temperature Range:** -40°F to +176°F (-40°C to +80°C) for intrinsically safe (Ex ia) installations.
-40°F to +194°F (-40°C to +90°C) for encapsulation (Ex mb) installations.
- **Output Voltage:** 20-35 V P-P
- **Dc Resistance at 75°F:** 1670-1710 ohms
- **Inductance at 1kHz:** 29 mH. Nom.
- **Output Leads:** 18 AWG
- **Insulation Resistance at 500 VDC:** 100 MΩ MIN.
- **Construction:** Wetted Material: 303 Stainless Steel
- **M321 is fully encapsulated (potted) and impervious to dust and foreign material.**

Warning:

System design considerations, installation instructions, and all local and national safety requirements must be observed by qualified personnel and carefully followed in accordance with the regulations for conformity to EN IEC 60079-0:2018, EN 60079-11:2012 and EN 60079-18:2017.

Condition of Use:

1. The user shall ensure that the equipment is installed such that the peak to peak open circuit output voltage does not exceed 60Vpp.
2. Models supplied with an integral connector (-P suffix) shall be installed in intrinsically safe installations only. These models are supplied with a separate certification label and the user shall ensure that the label is attached to the installation, close to the equipment, after installation.
3. The equipment may be supplied with an integral cable of variable length with a capacitance of 200pF/m and inductance of 1μH/m or 30μH/Ω. The user shall consider these parameters in conjunction with any additional cabling during the installation of the equipment in intrinsically safe installations.

Installation:

M321 must be connected to an Intrinsically Safe barrier in order for Ex ia protection.

The instrument or installation must limit the generated voltage to 21 V_{RMS} (60 V_{P-P}), Max current 0.05 Amps.

Ex ia: U_i = 28 VDC, I_i = 93 mA;

Ex mb: U_i = 18 VDC

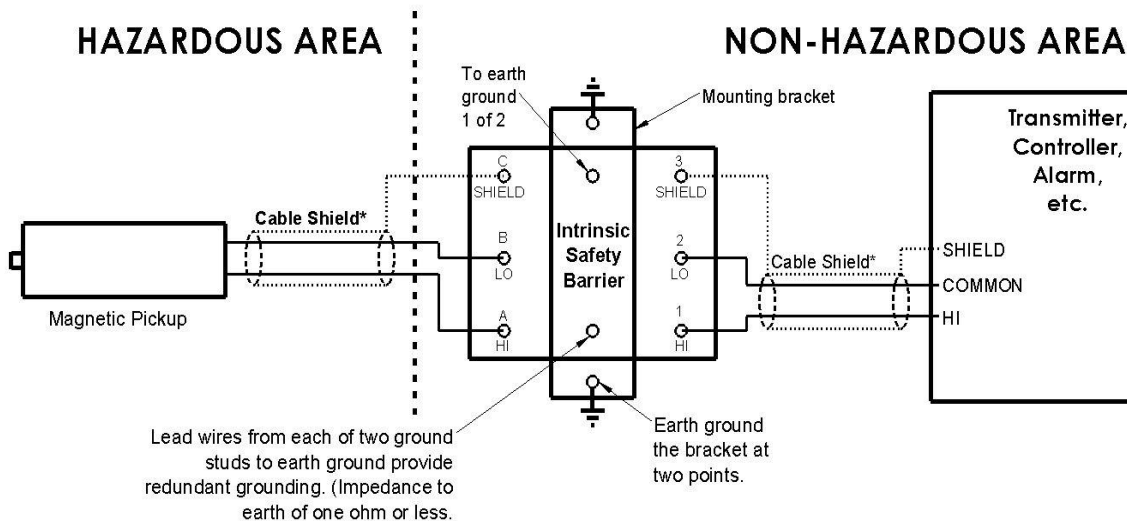


Figure2: Intrinsic Safety Barrier connection layout

Entity Parameters:

Entity Parameters for Ex ia installation		
V _{max} / U _i	Maximum Input Voltage =	28 V
I _{max} / I _i	Maximum Short Circuit Current =	93 mA
L _i /R _i	Maximum Unprotected Inductance =	18 μH/Ω
C _i	Maximum Unprotected Capacitance =	0 F
P _i max	Maximum Input Power =	0.651W

Mounting Instructions:

General diagram for Pickup mounting shown in figure3:

Locking Nut is provided to tighten the pickup at the required location.

The recommended air gap between blind surface of the pickup and the gear tooth is 0.005 to 0.025 inches to achieve correct output voltage. The rule of thumb is to screw the pickup until it touches the tallest tooth, then unscrews it back $\frac{1}{4}$ to $\frac{1}{2}$ turn.



Figure3: Pickup mounting example
(Pickup probe is collinear with radius of the gear)

Note that selection of the toothed gear has been based on the figure 4 which shows that the available pole piece diameter (refer to sales drawing) and the required dimensional conditions for the gear tooth dimensions.

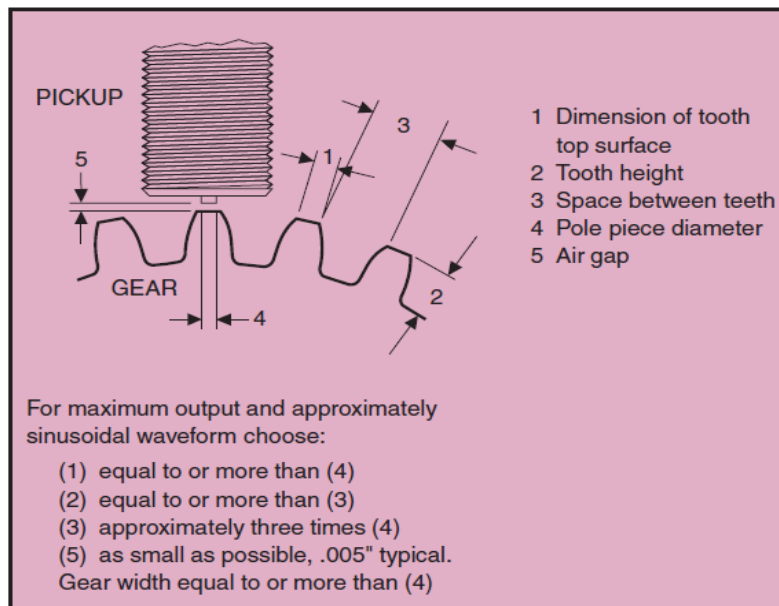


Figure4: Dimensional conditions

Agency Approval:

ATEX/IECEX CERTIFIED



0081

II 1 G

Ex ia IIC T4 Ga

-40°C ≤ Tamb ≤ +80°C

II 2 G

Ex mb IIC T4 Gb

-40°C ≤ Tamb ≤ +90°C

CML 19ATEX2490X

IECEX CML 19.0182X

Return Request / Inquiries:

Direct all warranty and repair requests/inquiries to Barksdale, Inc. customer service department.

Call 323-589-6181, fax: 323-589-3463

Before returning any product(s) to Barksdale, you must obtain a returned merchandise authorization from our customer service department (in order to avoid processing delays).

For warranty returns, please have the following information available before contacting Barksdale:

1. P.O. number under which the product was PURCHASED.
2. Model number of the product under warranty.
3. Repair instructions and/or specific problems you are having with the product.
4. Application information. Copyright 2019 Barksdale, Inc.