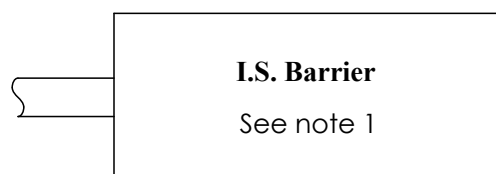


Non-Hazardous Location

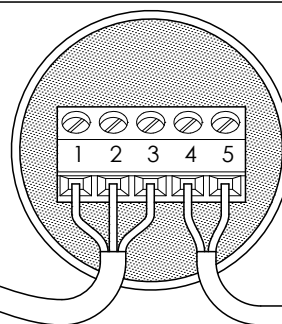


(Associated Equipment)

$$\begin{aligned} V_{\max}, U_i &\geq U_o, V_{oc} \text{ or } V_f \\ I_{\max}, I_i &\geq I_o, I_{sc} \text{ or } I_t \\ C_o \text{ or } C_a &\geq C_i + C_c \end{aligned}$$

$$\begin{aligned} L_o \text{ or } L_a &\geq L_i + L_c \\ P_f \text{ or } P_o &\leq P_i \end{aligned}$$

Hazardous Location





Use appropriately certified
Intrinsically Safe Sensors
(Example IS40A or IS40)


(Intrinsically Safe Equipment)


$$\begin{aligned} V_{\max}, U_i &= 30 \text{ Vdc} \\ I_{\max}, I_i &= 100 \text{ mA} \\ C_i &= 1 \text{ nF} \quad (\text{For IS4022 \& IS4022A}) \\ C_i &= 12 \text{ nF} \quad (\text{For IS4027 \& IS4027A}) \\ C_i &= 14 \text{ nF} \quad (\text{For IS4028 \& IS4028A}) \\ L_i &= 0 \text{ mH max.} \\ P_{\max}, P_i &= 0.66 \text{ watts} \end{aligned}$$

Certifications for IS4022A, IS4027A & IS4028A

ATEX:  II 1 G Ex ia IIC T6...T4 Ga
FM08ATEX0068X

UKEX:  II 1 G Ex ia IIC T6...T4 Ga
FM22UKEX0110X

CE:  Compliance with
EN50081-1, EN50082-1 (For IS4022A)
EN55011, EN50082-2 (For IS4027A & IS4028A)

IECEx:  Ex ia IIC T6...T4 Ga
IECEx FMG 16.0003X

T4 @ -40°C ≤ T_{amb} ≤ +85°C
T5 @ -40°C ≤ T_{amb} ≤ +80°C
T6 @ -40°C ≤ T_{amb} ≤ +60°C

NOTES:

1. Barrier must satisfy the electrical requirements listed above.

Barrier manufacturer's installation drawing must be followed when installing the system.

For US installations, the barrier configuration must be FM Global approved. See Bulletin 4003 for recommended barriers.

2. The preamp shall be installed in an enclosure. It shall also be installed in compliance with the enclosure, mounting, spacing, and segregation requirements of the ultimate application.

For ATEX, UKEX, and IECEx installations the enclosure shall maintain an ingress protection rating of IP54 (or greater according to the intended use and environmental conditions) and meets the enclosure requirements of EN 60079-0 and EN 60079-11 (for UKEX installations BS EN IEC 60079-0 and BS EN 60079-11, for IECEx installations IEC 60079-0 and IEC 60079-11).

Installation shall also be in accordance with the following standards:

for US installations follow ANSI/ISA RP12.6 and the National Electrical Code ANSI/NFPA 70,

for Canadian installations follow the Canadian Electrical Code,

for ATEX & UKEX installations follow EN 60079-14, for IECEx installations follow IEC 60079-14.

3. Control Equipment connected to associated equipment must not use or generate more than 250V.

4. The non-metallic cover of the preamp is considered an electrostatic discharge hazard.

Clean only with a damp cloth.

5. Preamplifier should be de-energized before separating connections.

Certifications for IS4022, IS4027, & IS4028

USA: Intrinsically Safe
Class I, II, III, Division 1
Group ABCDEFG T6...T4
Class I, Zone 0, AEx ia IIC T6...T4

Canada: Intrinsically Safe
Class I, Division 1
Group ABCD T6...T4
Class I, Zone 0, Ex ia IIC T6...T4

T4 @ -40°C ≤ T_{amb} ≤ +85°C
T5 @ -40°C ≤ T_{amb} ≤ +80°C
T6 @ -40°C ≤ T_{amb} ≤ +60°C

SPECTEC
THUNDERBIRD INTERNATIONAL CORPORATION

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406-333-4967 • FAX: 406-333-4259

DO NOT ALTER WITHOUT AGENCY APPROVAL


IS

PREAMPLIFIER AND CONVERTER
FOR PASSIVE MAGNETIC
SPEED SENSOR

TITLE
INTRINSICALLY SAFE
INSTALLATION INSTRUCTIONS

AGENCY APPROVAL DATE
Feb 17th, 2023
REV. 9 DATE 11-15-2022

DRAWN BY JE

APPROVED BY 

SCALE PROCESS SPEC.

NUMBER
85049