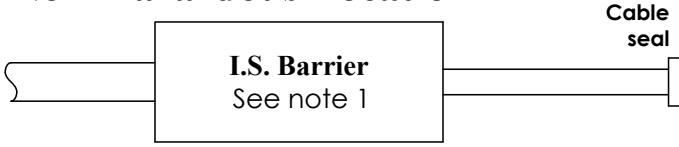
## Non-Hazardous Location

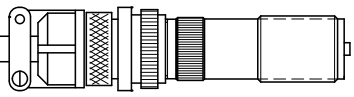



**(Associated Equipment)**

**Vmax, Ui ≥ Uo, Voc or Vt**
**Imax, Ii ≥ Io, Isc or It**
**Co or Ca ≥ Ci + Cc**

**Lo or La ≥ Li + Lc**
**Pt or Po ≤ Pi**

## Hazardous Location



**(Intrinsically Safe Equipment)**

**Vmax, Ui = 30 Vdc**
**Imax, Ii = 100 mA**
**Ci = 0 nF** (For IS100, IS101, IS100A, IS101A, IS220, IS221, IS220A & IS221A)
**Ci = 12 nF** (For IS90, IS90A, IS91, IS91A, IS160, IS160A, IS161, IS161A, IS170, IS170A, IS171 & IS171A)
**Li = 0 mH max.**
**Pmax, Pi = 0.66 watts**

## Certifications for IS90A & IS91A IS100A & IS101A, IS160A & IS161A, IS170A & IS171A, IS220A & IS221A

**ATEX:** **II 1 G Ex ia IIC T6...T4 Ga**
**FM08ATEX0066X**

FM APPROVED

**UKEX:** **II 1 G Ex ia IIC T6...T4 Ga**
**FM22UKEX0108X**

**CE:** **Compliance with EN55011, EN50082-2**

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

**T4 @ -40°C ≤ $T_{amb}$ ≤ +100°C**
**T5 @ -40°C ≤ $T_{amb}$ ≤ +85°C**
**T6 @ -40°C ≤ $T_{amb}$ ≤ +65°C**

## Certifications for IS70 & IS71 IS100 & IS101, IS160 & IS161, IS170 & IS171, IS220 & IS221

**USA:** **Intrinsically Safe**
**Class I, II, III, Division 1**
**Group ABCDEFG T6...T5**
**Class I, Zone 0, AEx ia IIC T6...T5**

C FM US APPROVED

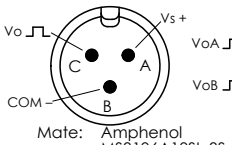
**Canada:** **Intrinsically Safe**
**Class I, Division 1**
**Group ABCD T6...T5**
**Class I, Zone 0, Ex ia IIC T6...T5**

**T5 @ -40°C ≤ $T_{amb}$ ≤ +85°C**
**T6 @ -40°C ≤ $T_{amb}$ ≤ +65°C**

## NOTES:

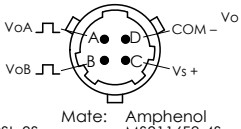
1. **Barrier must satisfy the electrical requirements listed above.** Barrier manufacturer's installation drawing must be followed when installing the system. For US installations, the barrier configuration must be FM Global approved. See Bulletin 4003 for recommended barriers.
2. **Installation** to 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. **Sensor must be mounted as part of a bonded structure.**
5. **Sensor should be de-energized** before separating connector and sensor.
6. **Aluminum housings: The mounting bracket contains aluminum and is considered to constitute a potential risk of ignition by impact or friction and must be taken into account during installation.**
7. **Lead Wires:** Red/Vs+, Black/Common-, White/Vo Output A, Yellow/Vo Output B, Green/Direction
   **Connector:**

**MO3**



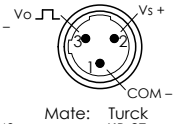

Mate: Amphenol MS3106A10SL-3S

**B4**



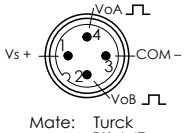

Mate: Amphenol MS3116F8-4S

**MC3**



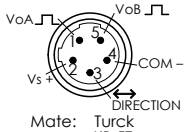

Mate: Turck KB 3T

**MD4**



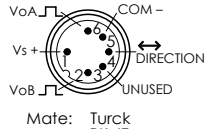

Mate: Turck RK 4.4T

**MC5**



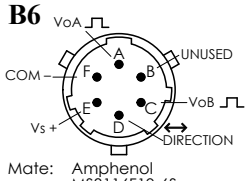

Mate: Turck KB 5T

**MD6**




Mate: Turck RK 6T

**B6**




Mate: Amphenol MS3116F10-6S

**SPECTEC**
**THUNDERBIRD INTERNATIONAL CORPORATION**
P.O. Box 360 • Emigrant, MT 59027
406-333-4967 • FAX: 406-333-4259

**DO NOT ALTER WITHOUT AGENCY APPROVAL**

IS *DIGISPEC* **SPEED AND POSITION SENSOR**

TITLE: **INTRINSICALLY SAFE INSTALLATION INSTRUCTIONS**

AGENCY APPROVAL DATE: Feb 17th, 2023
REV. **14** DATE **11-15-2022**

DRAWN BY: JE
APPROVED BY: JE
SCALE: **PROCESS SPEC.**
NUMBER: **85047**