960-0136-001 | B

REVISIONS			
LTR	DESCRIPTION	DATE	APVD
A	Original Release per C.O.7489	8/24/17	CSK
B	Revised per C.O.7763	8/20/2021	HM

VERIFY REVISION BEFORE USING

RECORD OF REVISION STATUS OF EACH SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
A	A	A	A	/																								
B	B	B	B	/																								

REGULATORY DOCUMENT

APPROVALS		DATE
PREPARED	CS Kalley	2/21/17
CHECKED	CS Kalley	8/24/17
DSGN ENGR	CS Kalley	8/24/17
QUAL ENGR	D. Schiavo	8/31/17
MFG ENGR	J. Zitnay	9/1/17

AI-TEK Instruments, LLC
CHESHIRE, CT USA 06410

TITLE:

INSTALLATION INSTRUCTIONS SOLAR SPEED SENSORS

SIZE	CODE IDENT. NUMBER	DWG. NO.
A	1XP56	960-0136-001

SHEET 1 OF 4

INSTALLATION INSTRUCTIONS FOR MAGNETIC SPEED SENSORS

Page 1 is for Document Control Only and is not included.

REGULATORY COMPLIANCE:

This device is to be used to generate a signal whose frequency is proportional to the speed of a target rotating in front of it. It conforms to the requirements of EN 60079-18:2015+A1:2017 & EN 60079-0:2018 and IEC 60079-0:2017 & IEC 60079-18:2014+A1:2017 for use in a Group II category 2G, Zone 1 hazardous environment. It also Conforms to ANSI/UL 1203 & 61010 and is Certified to CSA C22.2 No. 30 & No. 61010 for use in Class I Division 1 Group B, C, D T3.

The safety of operation is assured by the design and construction of the unit. It's operating circuitry features low energy capability, very low capacitance and inductance and is mounted in a fully encapsulated, stainless steel housing with no significant amount of light metal. It has a very low temperature rise, (<10°C) over the ambient or mounting temperature.

MANUFACTURER:

Al-TEK Instruments, LLC.
152 Knotter Drive
Cheshire, CT 06410 USA
Models: 70090-XXXXXXX

MARKING:

Ⓔx II 2G
Ex mb IIC T3 Gb
-40°C ≤ Tamb ≤ 150°C
ITS17ATEX11926X

Ex mb IIC T3 Gb
-40°C ≤ Tamb ≤ 150°C
IECEx ETL17.0027X

C ETL US LISTED
Intertek
3181664
CONFORMS TO:
ANSI/UL 61010

CERTIFIED TO: CAN/CSA
C22.2 No. 61010

ETL Required Marking.

SIZE	CODE IDENT. NUMBER	DWG NO.:	REV B
A	1XP56	960-0136-001	SHEET 2

⚠ CONDITIONS OF USE: ⚠

1. The flying leads must be terminated in a suitable Ex approved terminal enclosure when terminated in a Classified (Zoned) area.

2. These devices shall only be installed in applications where the operating temperature is between -40°C and +150°C.

GENERAL SPECIFICATIONS:

- Output Voltage: ≥1Vp-p with a 12DP target gear rotating at 100 in/sec with a .028 air gap with load resistance = 5KΩ + .01uF
- Electrical Parameters

	DCR (Ohms)	Inductance (mH)
Ø .093 Pole Piece Models	160 - 210	30 MAX
Ø .125 Pole Piece Models	170 – 200	45 MAX
Ø .188 Pole Piece Models	190 – 220	55 MAX
Dual Coil Models	Coil #1 135 – 155 Coil #2 210 - 230	Coil #1 30 MAX Coil #2 30 MAX

- Mounting Thread: 5/8-18 UNF (70090-5266422 = 1.25"-12 UNF)
- Operating/Mounting temperature: -40°C to 150°C maximum
- IP 66

MECHANICAL SENSOR INSTALLATION SEE FIGURE #1:

1. If a feeler gauge can be used, select the gauge with the proper thickness and place it over the highest point on the target. Thread the sensor into the mounting bracket until it touches the selected gauge, then tighten the locknut. Remove the feeler gauge when complete.

2. If a feeler gauge cannot be used, thread the sensor into the mounting bracket finger tight against a tooth or the largest diameter of the stationary target. Back the sensor out of contact until the desired air gap is set, then tighten the locknut. A full CCW revolution results in an air gap of .056" with a 18 pitch thread and .083" with a 12 pitch thread.

NOTE: The mounting bracket (or machine frame) must be solidly connected to an Earth terminal to insure that the sensor housing is grounded in installation.

ALL UNITS WITH 5/8-18 THREADS:
DO NOT EXCEED 100 POUND-INCHES TORQUE ON LOCKNUT
ALL UNITS WITH 1.25-12 THREADS:
DO NOT EXCEED 200 POUND-INCHES TORQUE ON LOCKNUT

EXTERNAL PIPE THREADS FOR CONDUIT FITTINGS:

Install the conduit fitting onto the sensor external thread and hand tighten. While holding the hex portion of sensor body with a suitable wrench, tighten the conduit fitting as required.

ELECTRICAL INSTALLATION:

All connecting wiring must be done in accordance with all applicable codes and requirements for the Class and Division or Zone of the location the sensor is being installed in.

MAINTENANCE:

This component requires no maintenance or recalibration other than periodic checks to ensure that it is relatively clean and secure (no loose locknuts).

USER PRECAUTIONS:

1. **DO NOT connect to power source! Ne filé pas a la source de pouvoir!**

2. **To reduce the risk of ignition of hazardous atmospheres, disconnect sensor from supply circuit before opening. Keep assembly tightly closed when in operation.**
   Pour réduire le risque d'inflammation des atmosphères dangereuses, débranchez le capteur du circuit d'alimentation avant d'ouvrir. Maintenir l'assemblage bien fermé lorsqu'il est en service.

3. Contact between the sensor and a rotating target may cause damage to the sensor. Always adjust the air gap between the sensor tip and the target while the target is motionless with its largest diametrical feature in front of the sensor. After the adjustment, slowly rotate the target by hand, if possible, to ensure that there is no contact due to run out.
   Le contact entre le capteur et une cible tournante peut endommager le capteur. Réglez toujours l'entrefer entre la pointe du capteur et la cible alors que la cible est immobile avec sa plus grande caractéristique diamétrale devant le capteur. Après le réglage, tournez lentement la cible à la main, si possible, pour vous assurer qu'il n'y a pas de contact en cours d'exécution.

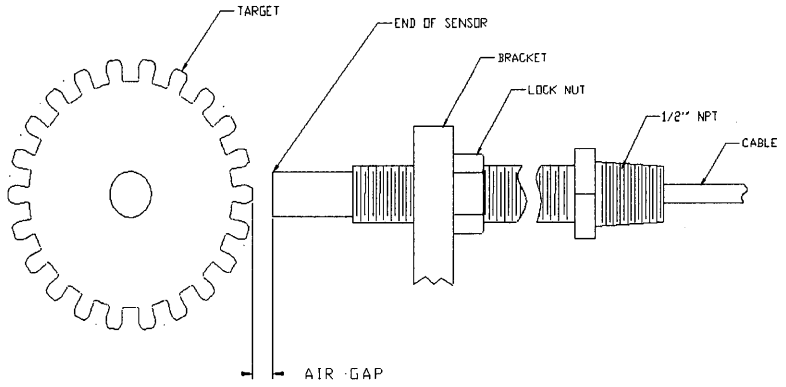

FIG. 1 - TYPICAL SENSOR INSTALLATION

SIZE	CODE IDENT. NUMBER	DWG NO.:	REV **B**
A	**1XP56**	**960-0136-001**	SHEET 4