960-0130-001 D

REVISIONS			
LTR	DESCRIPTION	DATE	APVD
1	Preliminary	4/4/11	CSK
2	Changed Max. Amb temp to 95C from 100C	5/27/11	CSK
A	Original Release per C.O.6573	7/19/11	CSK
B	Revised per C.O.6964	8/13/13	CSK
C	Revised per C.O.7442	9/1/16	CSK
D	Revised per C.O.7449	9/30/16	CSK

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
1	1	1	1	/																								
2	2	1	1	/																								
A	A	A	A	/																								
B	B	A	A	/																								
C	C	A	A	/																								
D	D	A	A	/																								

REGULATORY DOCUMENT

APPROVALS		DATE
PREPARED	CS Kalley	4/4/11
CHECKED	CSKalley	7/19/11
DSGN ENGR	CSKalley	7/19/11
QUAL ENGR	CEGerard	7/19/11
MFG ENGR	ERuman	7/19/11

AI-TEK Instruments, LLC
CHESHIRE, CT USA 06410

TITLE: **INSTALLATION INSTRUCTIONS MAGNETIC SPEED SENSOR ATEX ZONE 1**

SIZE	CODE IDENT. NUMBER	DWG. NO.
A	1XP56	960-0130-001

SHEET 1 OF 4

INSTALLATION INSTRUCTIONS FOR 70085-3030-XXX FAMILY MAGNETIC SPEED SENSORs

Page 1 is for Document Control only and is not included

EC & IEC COMPLIANCE:

This non-sparking device conforms to the requirements of EN 60079-0 & EN 60079-11 and IEC60079-0 & IEC 60079-11for use in a Group II, Category 2G, Zone 1 hazardous environment. 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. It has a very low temperature rise, < 10°C over the ambient or mounting temperature. This sensor must be used with an MTL model 7764ac Intrinsic Barrier.

MANUFACTURER:

AI-Tek Instruments, LLC
152 Knotter Drive
Cheshire, CT 06410 USA
Model Family : 70085-303-XXX

SPECIFICATIONS:

- Operating Temperature Range – (-)65°C to (+)95°C
- Sensor Output Voltage: Voltage output to be 13.4 volts (Peak to Peak) minimum with a load of 100K Ω, when sensing an 8 pitch, 12 tooth steel gear rotating at a surface speed of 500IPS (12.7 M/sec) with an air gap of .030" (.76mm).
- Generated current – 50mA, maximum
- DC Coil Resistance – 185 Ω min. / 240Ω max.
- Coil Inductance – 35 mH Max @ 1 KHz

MARKING:

II 2G
Ex ia IIC T4 Gb
-65° C ≤ Tamb ≤ 95° C
ITS 09ATEX26207 X

Ex ia IIC T4 Gb
-65° C ≤ Tamb ≤ 95° C
IECEx ITS10.0018 X

SIZE	CODE IDENT. NUMBER	DWG NO.	REV D
A	1XP56	960-0130-001	SHEET 2

Part Identification Marking:

AI-TEK / 70085-3030-X X X xxx ← Date Code (2 digit Year, 1 digit month code)

Cable Length
1= 3 Meters
2= 10 Meters

Thread Size
1= 5/8"- 18
2 = ¾" - 20
3 = M16 x 1.5
4 = M20 x 1.5

Thread Length
1= 1.50"
2= 2.75"
3 = 4.00"
4 = 6.00
5 = 40mm
6 = 75mm
7 = 100mm
8 = 125mm
9 = 150mm

DATE CODE					
MONTH	CODE	MONTH	CODE	MONTH	CODE
JAN	A	MAY	E	SEPT	K
FEB	B	JUNE	G	OCT	L
MAR	C	JULY	H	NOV	M
APR	D	AUG	J	DEC	N

SENSOR INSTALLATION: Ref. Figure 1

1. If a feeler gauge can be used:
   Thread the sensor into its mounting bracket. Place the correct thickness feeler gauge between the highest point on the target and the end of the sensor. Thread the sensor in until it touches the gauge. Hold the hex portion of the sensor with a 1" (25.4mm) wrench and tighten the sensor lock nut against the bracket. **DO NOT exceed 100 in-lb (11.3 NM) torque on the locknut!**

   If possible, slowly rotate the target by hand at least 1 turn to insure that there is no interference between the target and the end of the sensor.

2. When a feeler gauge cannot be used:
   By hand, thread the sensor into its mounting bracket until the end of the sensor contacts the highest point on the target. Then, unscrew the sensor enough to get the correct air gap (1 full turn will give a gap of .056" [1.42mm] on units with a 5/8" threads, 050" on units with a ¾" thread and 1.5mm [.059"] on metric thread units). Hold the hex portion of the sensor with a 1" (25.4mm) wrench and tighten the sensor lock nut against the bracket. **DO NOT exceed 100 in-lb (11.3 NM) torque on the locknut!**

   If possible, slowly rotate the target by hand at least 1 turn to insure that there is no interference between the target and the end of the sensor.

   CAUTION: Contact between the sensor and a rotating target may result in 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.

3. Install a suitable conduit fitting into the female threads of the sensor, if required. Hold the hex portion of the sensor with a 1" (25.4mm) wrench and tighten the fitting as required.

CAUTION: All wiring connections **MUST** be made only with **NO** power applied to the circuit.

4. The signal leads from the sensor must be routed through a suitable conduit to their terminal location. All wiring must conform to all applicable codes and requirements. Refer to Figure 2.

5. This sensor ***must*** be connected to an Intrinsic Safety barrier (MTL model 7764ac) to insure safe operation. Ref. Fig. 2 Wiring Diagram

6. The end user ***must*** install the sensor in such a manner as to limit the output voltage to less than 12V pk-pk and a total energy of less than 26 micro Joules.

MAINTENANCE:

The sensor requires no maintenance or recalibration and contains no user-serviceable components. The sensor should be checked periodically for loose lock nuts and should be relatively clean.

FIGURE #1

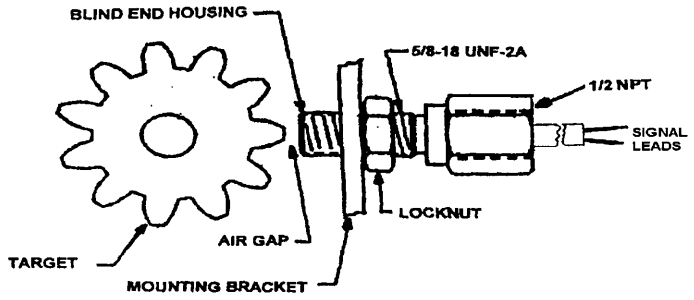
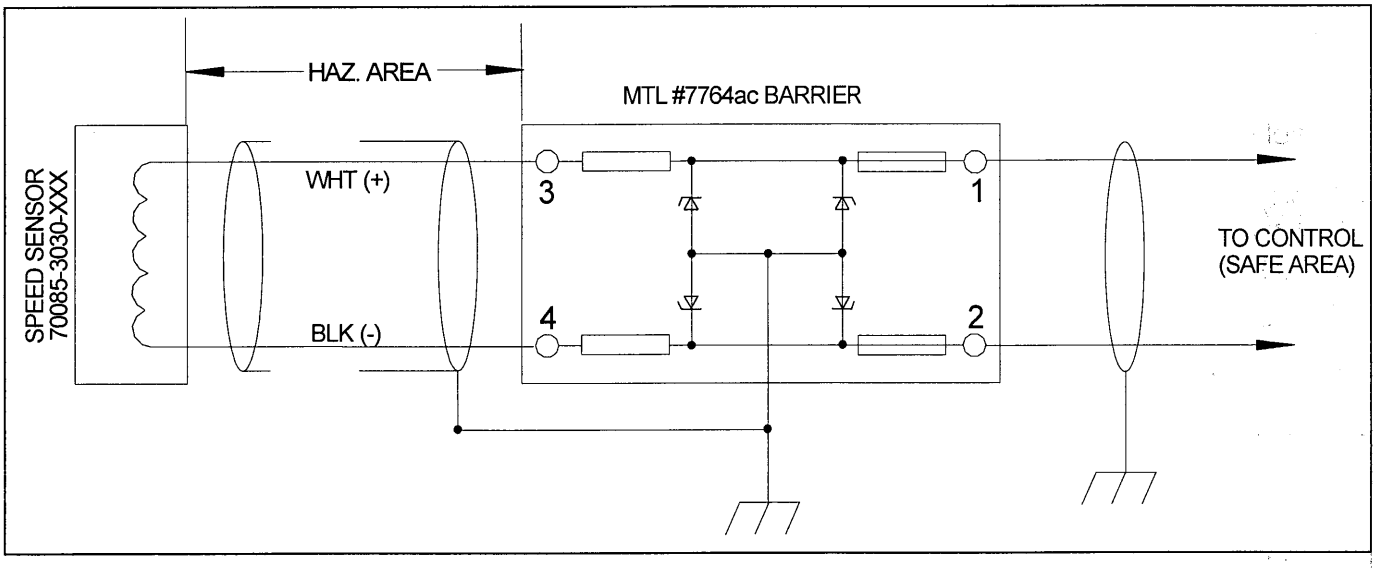


FIGURE 2
TYPICAL WIRING DIAGRAM



SIZE	CODE IDENT. NUMBER	DWG NO.	REV A
A	1XP56	960-0130-001	SHEET 4