

PROPRIETARY AND CONFIDENTIAL

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REVISIONS

REV.	ECN	DESCRIPTION	BY/DATE	CHK	APPR
A	13155	INITIAL RELEASE	LA 01/23/17	MH	LN
B	13378	REVISED TO INCLUDE (2) HEX NUTS	EM 03/28/17	EP	MH
C	13584	REVISED HEX NUT DIMENSIONS	RA, 07/14/17	MH	LN

D

D

C

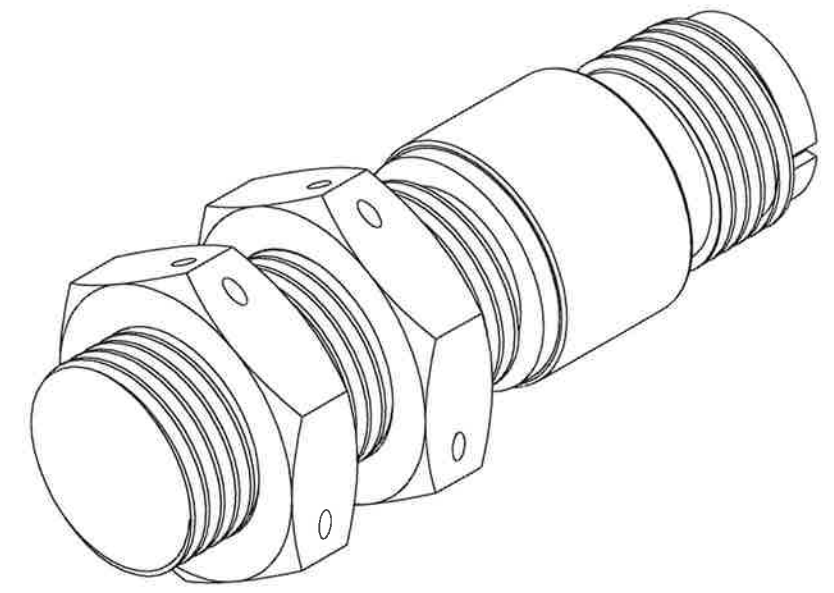
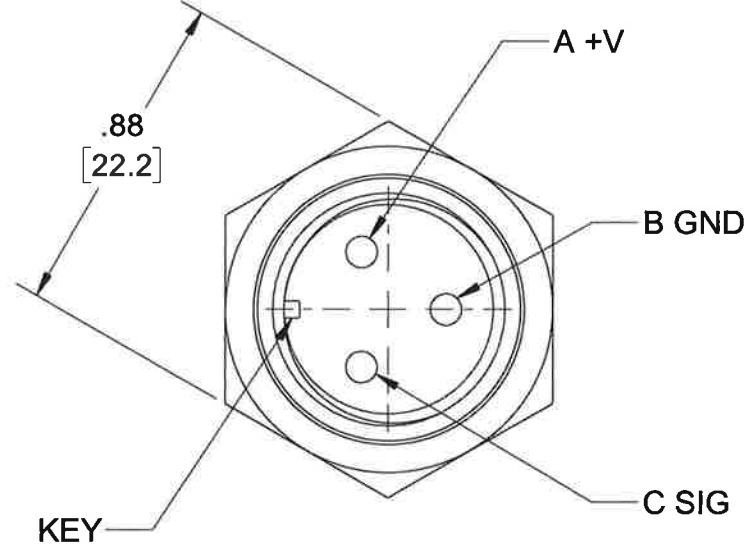
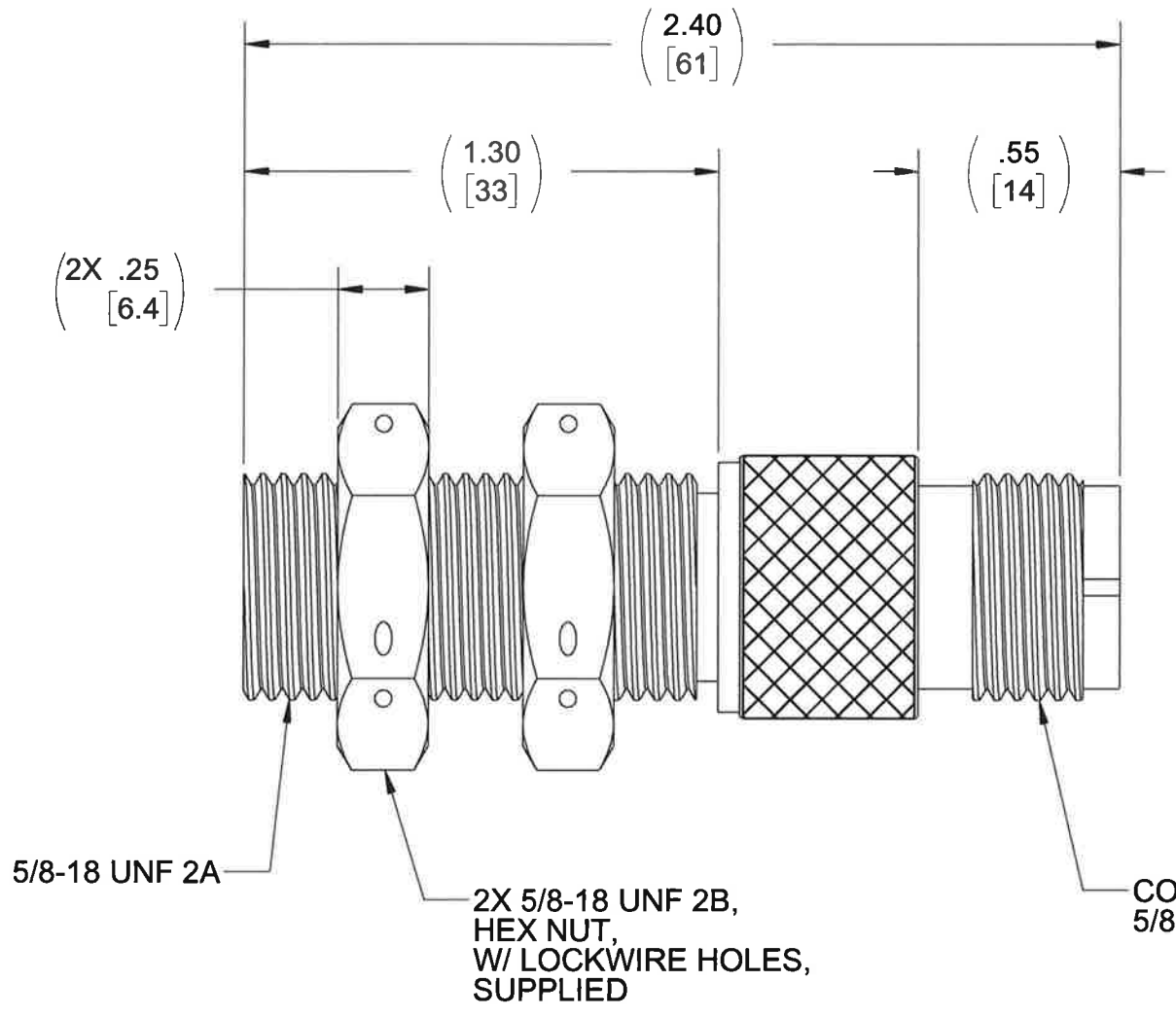
C

B

B

A

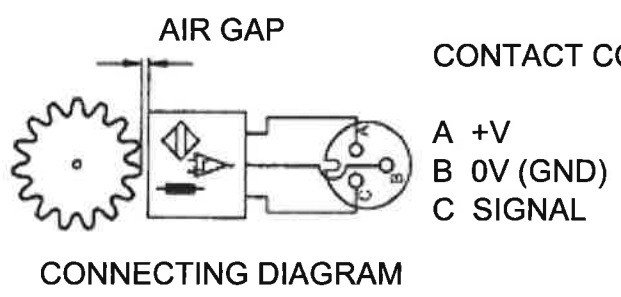
A



5/8-18 UNF 2A

2X 5/8-18 UNF 2B, HEX NUT, W/ LOCKWIRE HOLES, SUPPLIED

CONNECTOR, 3 PIN 5/8-24 UNEF 2A 1



1 MATES WITH DYTRAN MODEL 60038AXX.

NOTES: UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED: INTERPRET DIM & TOL PER ASME Y14.5M - 1994. REMOVE BURRS. COUNTERSINK INTERNAL THDS 90° TO MAJOR DIA. CHAM EXT THDS 45° TO MINOR DIA. THD LENGTHS AND DEPTHS ARE FOR MIN FULL THDS. DIMENSIONS APPLY AFTER FINISHING.

ALL MACHINED SURFACES. TOTAL RUNOUT WITHIN .005. BREAK SHARP EDGES .005 TO .010. MACHINED FILLET RADII .005 TO .015. WELDING SYMBOLS PER AWS A2.4. ABBREVIATIONS PER MIL-STD-12.

DECIMALS		METRIC		ANGLES
.XX ± .03	.X ± 0.8	.XX ± 0.25		± 1°
.XXX ± .010				

APPROVALS		DATE
ORIG	LA	02/09/17
CHK	AS	03/02/17
APP	LN	03/02/17

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION USA

DYTRAN MASTER INSTRUMENTS, INC. Chatsworth, CA

TITLE: **OUTLINE/INSTALLATION DRAWING, MODEL 4770A**

SIZE B	CAGE CODE 2W033	DWG NO 127-4770A	REV C
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SCALE: 2:1

SHEET 1 OF 2

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Variable Reluctance Speed Sensor with Amplifier

General

Function Variable Reluctance (VR) speed sensors consist of an iron core, an inductive coil, and a permanent magnet and an amplifier. A ferrous pole wheel passing the sensor face changes the magnetic field strength, resulting in an AC voltage being induced in the coil. This signal is converted to a square wave signal with constant amplitude by the integrated amplifier. The frequency of the output signal is proportional to the speed of the moving target.

Technical data

Current Consumption Max. 5 mA (without load) Coil properties 5 to 32 VDC, protected against reverse polarity

- Inductance @ 1 kHz: 170 mH ± 10%
- Resistance: 850 Ohm ± 10%
- Magnet polarity: north pole towards front face
- Pole piece: diameter 2.7 mm

Polarity Upon approach of ferrous metal, the signal pin is positive with respect to GND.
Signal output Square wave signal from NPN output transistor with internal 2.2 kOhm pull-up resistor, DC-coupled to supply (negative pole = reference voltage). The signal frequency is proportional to the target speed. The signal amplitude does not depend on air gap and target geometry.

Frequency range Up to 20 kHz, lower limit depending on application

Housing 5/8"-18 UNF-2A, tightening torque: max. 35 Nm
Connection Connector mates with straight plug MS3106A-10SL-3S, 3 pins Sensor head: IP68 Connector: IP67
Protection Housing and electronics galvanically isolated
Insulation (Test: 500 V, 50 Hz for 1 minute)

Pole wheel Prerequisite: Toothed wheel of a ferrous material (e.g. Steel 1.0036). Optimal performance with

- Involute gear
- Tooth width > 10 mm
- Side offset < 0.2 mm
- Eccentricity < 0.2 mm

Air gap between sensor depending on lowest circumferential speed which has to be detected. Typically pole wheel in the order of 1 mm.

Operating Temperature -40°C to 125°C

Further Information

Safety	All mechanical installations must be carried out by an expert. General safety requirements have to be met.
Installation	The sensor has to be aligned to the pole wheel according to the sensor drawing independent of its rotational orientation. Deviations in positioning may affect the performance and decrease the noise immunity of the sensor. During installation, the smallest possible pole wheel to sensor gap should be set. The gap should however be set to prevent the face of the sensor ever touching the pole wheel. The amplitude of the output signal is not influenced by the air gap. A sensor should be mounted with the middle of the face side over the middle of the pole wheel. Dependent upon the wheel width, a certain degree of axial movement is permissible. However, the middle of the sensor must be at minimum in a distance of 3 mm from the edge of the pole wheel under all operating conditions. A solid and vibration free mounting of the sensor is important. Eventual sensor vibration relative to the pole wheel can induce additional output pulses. The sensors are insensitive to oil, grease etc. and can be installed in arduous conditions.
Maintenance	Product cannot be repaired.
Transport	Product must be handled with care to prevent damage of the front face.
Storage	Product must be stored in dry conditions. The storage temperature corresponds to the operation temperature.
Disposal	Product must be disposed of properly, it must not be disposed as domestic waste.

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TITLE: **OUTLINE/INSTALLATION DRAWING, MODEL 4770A**

SIZE B	CAGE CODE 2W033	DWG NO 127-4770A	REV C
SCALE: 2:1	PART NO:	SHEET 2 OF 2	