

AI-TEK 70085 SERIES

Product Data Sheet

70085-1010-412

Passive variable-reluctance speed sensor

THREAD	5/8-18 UNF
OUTPUT	13.4 V P-P guaranteed
TEMPERATURE	-65 to +95 deg C
APPROVAL	UL and CSA listed

AI-Tek 70085-1010-412 is a self-powered passive magnetic speed sensor. Ferrous target teeth change magnetic flux at the sensing tip, inducing an AC signal whose frequency follows target speed.

01

VERIFIED TECHNICAL DATA

Product series	AI-Tek 70085 Series
Sensor principle	Passive variable reluctance
Mounting thread	5/8-18 UNF-2A
Thread length	6.000 in / 152.40 mm
Sensor length	7.25 in
Termination	Wire leads
Standard output	54 V P-P
Guaranteed output	13.4 V P-P
DC resistance	240 ohms maximum
Typical inductance	30 mH reference
Output polarity	White lead positive
Operating temperature	-65 to +95 deg C
Lead length	10 ft / 3.05 m
Housing ground	Green/yellow tracer
Net weight	14 oz maximum
Approval	UL/CSA hazardous-location listed

02

PRODUCT IDENTITY AND FUNCTION

The 70085-1010-412 combines a permanent magnet, pole piece, coil and threaded metal housing. Passing ferrous gear teeth vary magnetic flux and generate an AC waveform without an external sensor supply.

03

OUTPUT AND TARGET CONDITIONS

- Guaranteed output is based on a 0.030 in air gap and 500 inches-per-second target surface speed.
- Output amplitude depends on surface speed, air gap, target geometry and connected load impedance.
- The generated frequency is proportional to the number of ferrous targets passing the pole piece per unit time.

04

APPLICATION VALUE

- Turbine and compressor shaft-speed measurement
- Conveyor and reducer rotation supervision
- Zero-speed and underspeed detection
- Overspeed protection inputs for control and protection circuits

05

OFFICIAL SOURCES

AI-Tek Instruments - Passive Sensor Selection Guide
AI-Tek Instruments - UL/ATEX/CSA Passive Speed Sensors
AI-Tek Instruments - Introduction and Principles of Operation

AMIKON PRODUCT SUPPORT

INFO@AMIKON.CN

AMIKONG.COM