

APTER POWER PRODUCT MANUAL

70085-1010-412

passive magnetic speed sensor

The 70085-1010-412 is an AI-Tek passive magnetic speed sensor. The official selection guide lists a 5/8-18 mounting thread, 13.4 V peak-to-peak guaranteed output under the stated test condition, wire termination, a 6 in threaded section, and a 7.25 in overall sensor length.

The sensor generates an alternating electrical signal as ferrous gear teeth or another suitable target pass the pole piece. Signal frequency follows target speed, while amplitude varies with surface speed, air gap, target size, and load impedance. It supports rotational-speed, frequency, and event sensing without an external sensor power supply.

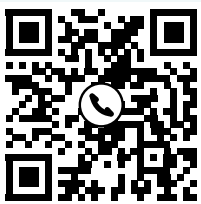
Manufacturer	AI-Tek Instruments
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APTER POWER SALES TEAM

INDUSTRIAL AUTOMATION PRODUCT SUPPORT

Passive sensing. Long-reach threaded installation.

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SCAN FOR PRODUCT & QUOTE
70085-1010-412

1. Product Overview and Identity

The 70085-1010-412 is an AI-Tek passive magnetic speed sensor. The official selection guide lists a 5/8-18 mounting thread, 13.4 V peak-to-peak guaranteed output under the stated test condition, wire termination, a 6 in threaded section, and a 7.25 in overall sensor length.

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Model Configuration

Code	Officially supported interpretation
70085	AI-Tek passive magnetic sensor family
1010	Family configuration identifier retained from the official part number
412	Exact option listed in the official Passive Sensor Selection Guide

Key Features

- Self-generating passive magnetic pickup
- Long 6 in threaded section for deep-reach mounting
- Wire termination for direct field connection
- Exact part number and ratings verified in the official AI-Tek guide

2. Technical Specifications

Only AI-Tek-published family or exact-part information is stated. Nonstandard, placeholder, legacy-style, or MOD-controlled fields are identified rather than inferred.

Parameter	Verified value or limitation
Product Type	Passive magnetic speed sensor
Mounting Thread	5/8-18
Guaranteed Output	13.4 V peak-to-peak
Output Test Condition	0.030 in air gap at 500 IPS
Termination	Wires
Thread Length	6 in
Sensor Length	7.25 in
Agency Approval Column	Marked X in the official selection guide
Temperature Rating	-65 C to +95 C
Exact Published Weight	Not published in the reviewed selection guide

Configuration-Control Note

AI-Tek output is specified at a 0.030 in air gap and 500 IPS target surface speed. Actual output depends on surface speed, air gap, target geometry, and connected load impedance.

3. Functions, Applications and Components

Core Functions

- Generates an AC waveform as ferrous target features pass the pole piece
- Provides pulse frequency proportional to rotational speed
- Supports speed, frequency, and event detection
- Operates without a separate sensor excitation supply

Application Areas

Application	System role
Gear-Tooth Speed Measurement	Detects passing ferrous teeth on rotating equipment
Tachometer Inputs	Feeds compatible frequency or speed channels
Engine and Turbine Speed	Provides passive rotational-speed sensing
Industrial Machinery Monitoring	Supports event and shaft-speed measurement

Compatible Components

- Ferrous target geometry sized for the required output
- High-impedance speed, frequency, tachometer, or counter input
- Shielded field wiring and grounding arrangement appropriate to the site
- Mounting boss with 5/8-18 thread and verified insertion clearance

Lifecycle Status

AI-Tek includes 70085-1010-412 in its official Passive Sensor Selection Guide. Confirm current availability and the physical marking in the quotation before substitution.

4. Installation Precautions

- Set air gap with the machine stopped and prevent contact with the rotating target
- Verify target material, tooth geometry, minimum speed, and load impedance
- Do not treat the 13.4 V value as constant outside the published test condition
- Confirm insertion depth so the long threaded body cannot contact moving parts
- Route and shield the two signal wires according to the receiving-instrument instructions

STOP - Verify before installation

AI-Tek output is specified at a 0.030 in air gap and 500 IPS target surface speed. Actual output depends on surface speed, air gap, target geometry, and connected load impedance.

Use the physical nameplate and current AI-Tek documentation as the controlling records.

5. Official Source and Use Notice

Official source

AI-Tek Instruments Passive Sensor Selection Guide, part number 70085-1010-412

Apter Power product page

<https://www.apterpower.com/AI-Tek/70085-1010-412>

Use Notice

This original Apter Power reference is prepared from the named AI-Tek source. It is not a manufacturer publication and does not replace the official datasheet, physical nameplate, certificate, MOD or legacy drawing, installation instructions, or machine-builder documentation.

ASK FOR QUOTE

For availability and quotation details, visit www.apterpower.com or contact sales13@apterpower.com.