SMARTdiagnostics®

KCF technologies
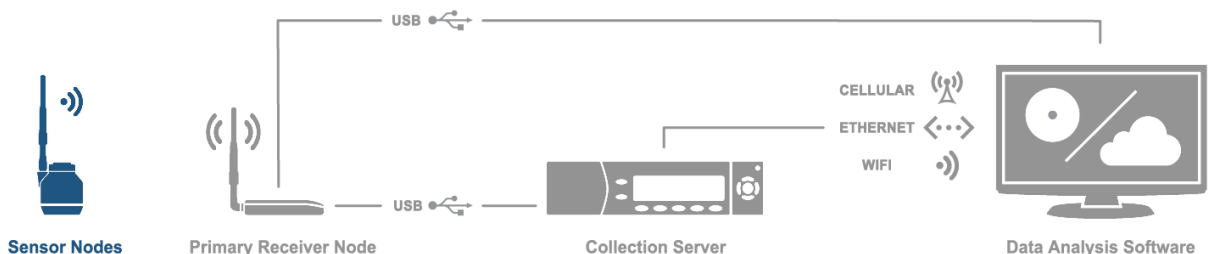
General Input Sensor Node (SD-IN-2)

The SmartDiagnostics® family of innovative wireless sensor products enables cost-effective predictive maintenance for industrial equipment. The system provides continuous remote monitoring of key performance indicators to track the operating health of equipment.

- Optimized for long battery life
- Customizable sampling regimes
- Flexible transducer options
- Expandable to hundreds of nodes per system

Give Your Machines a Voice™

Reliable Monitoring

General Input Nodes allow connection to existing diagnostic voltage or current output signals, creating a wireless solution for health monitoring in the most hard-to-reach, rugged locations. Each node communicates via a direct wireless link to a Primary Receiver Node, from which the data is imported into SmartDiagnostics® Software for viewing and analysis.

Flexible Configuration

The system is highly configurable and scalable and KCF can provide transducers to meet a wide array of applications. A system can have hundreds of sensor points, each of which can be configured to transmit data on a user-selected frequency, and unique indicators can be implemented to warn users of potential machine health issues.

Cost Effective

Easily installed without the downtime, expense, and labor costs of old-fashioned, hard-wired sensors. Simply place the sensors where you need them and within minutes they'll transmit data. SmartDiagnostics® can predict failure before it occurs, saving money spent on unnecessary replacements and extending machine life. At the same time, energy costs are reduced, as properly maintained machines are more efficient.

USB

CELLULAR

ETHERNET

WIFI

USB

Sensor Nodes   Primary Receiver Node   Collection Server   Data Analysis Software

General Input Sensor Node Specifications

Mechanical

Configuration	Wireless node with cable for connection to customer-supplied voltage or current signal source
Weight	4.1 oz (115 g)
Enclosure Material	Anodized aluminum and high-strength polycarbonate
Cable Length	3.3 ft (1m)
Connector Type	4-pin M12x1 (Turck WK 4.41T-1)
Optional Pigtail	4-pin M12x1 with 4 bare wires (Turck FS 4.4-1)

Environmental

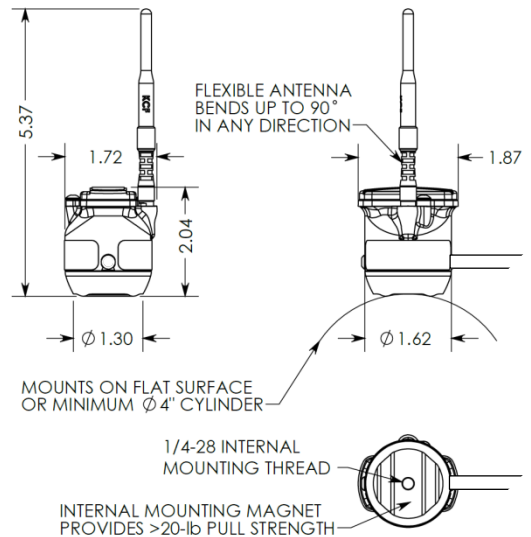|	
Storage Temperature	-40 to 238 °F (-40 to 120 °C)
Min. Operating Temp.	-4 °F (-20 °C)
Max. Operating Temp.	230 °F (110 °C) surface @ 72 °F (22 °C) ambient 212 °F (100 °C) surface @ 105 °F (40 °C) ambient 167 °F (75 °C) surface @ 167 °F (75 °C) ambient
IP Rating	IP65, dust-tight and impervious to water jets
Impact Resistance	Survives 5-ft drop onto concrete surface

Wireless Radio

Radio	KCF DART™ Wireless 2.4GHz ISM band, FCC ID #Z5ISD2
Range	800ft (244m) line-of-sight (site survey recommended for installation)
Antenna	Steerable antenna, providing 360° directional coverage.

Power

Power Source	3-Volt Lithium Manganese Dioxide (CR123A)
Battery Life	32-sample acquisition every: • 13 seconds – 1 year • 40 seconds – 3 years • 65 seconds – 5 years Note: battery life is somewhat reduced at extremely cold temperatures

Electrical Input

Type	Voltage or Current input
Range	0-11 VDC (SD-VIN-2) 0-20 mA (SD-CIN-2)
Resolution	0.03% of full scale
Noise Floor	0.05% of full scale
Samples per Acquisition	32-1600 configurable
Sampling frequency	64 Hz – 8192 Hz configurable
Operating Temperature	-40 to 185 °F (-40 to 85 °C) Typical

FLEXIBLE ANTENNA BENDS UP TO 90° IN ANY DIRECTION

5.37 1.72 1.87 2.04 Ø 1.30 Ø 1.62

MOUNTS ON FLAT SURFACE OR MINIMUM Ø 4" CYLINDER

1/4-28 INTERNAL MOUNTING THREAD

INTERNAL MOUNTING MAGNET PROVIDES >20-lb PULL STRENGTH

Configurations

Part Number	Description	Connections
SD-CIN-2	Current-input sensor, for interfacing with 4-20 mA signals	1: Power (Brown) 2: Signal (White) 3: NC (Blue) 4: Ground (Black)
SD-VIN-2	Voltage-input sensor, for interfacing with DC voltage signal	1: Power (Brown) 2: Signal (White) 3: NC (Blue) 4: Ground (Black)