SMARTdiagnostics®

IoT HUB (SD-HUB-1)

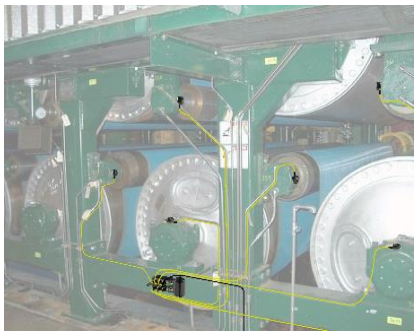
IoT Hub w/ wired vibration sensors Battery or DC powered (SD-HUB-1-MB & SD-WVS-1)

AC/DC powered IoT Hub (SD-HUB-1-MA)

Battery/DC powered IoT Hub (SD-HUB-1-MB)

The SMARTdiagnostics IoT Hub is the next generation of full asset health solutions designed by KCF Technologies to handle the most complex asset monitoring needs, including triggered collections, multi-functional sensor ports and the ability to withstand higher temperatures with external power sourcing, including an optional wired power solution

- Multiple power options available
- Capable of triggered and simultaneous collections
- Compatible with multiple sensor types, including third party options



HIGH TEMPERATURE

The IoT Hub can be positioned away from extreme environments while power is supplied to the sensors. This allows sensors to be placed on high temperature machines without compromising battery power or temperature limits

TRIGGERED MACHINES

In triggered machines, such as robots, the IoT HUB can be configured to activate sensors in response to unique movement patterns. This allows for more focused data collection as opposed to continuous monitoring

SHIELDED MACHINES

Assets in shielded areas, such as those covered by metal or screening, pose an issue where wireless sensors struggle to connect to the network. The IoT HUB provides a wired solution for monitoring these machines

KCF technologies

© KCF Technologies, Inc.
336 South Fraser Street
State College, PA 16801
www.kcftech.com

CONTACT US:
(814) 867-4097
sales@kcftech.com

SMARTdiagnostics®

Learn more at kcftech.com/hardware

IoT Hub Specifications

General

Weight	672g (Battery/DC Power Version), 621g (AC/DC Power Version)
Enclosure Material	Polycarbonate Alloy
Mounting	#10 or M5 Socket Head, temporary magnet
Certifications	cETLus, CE per UL/CSA/EN/IEC 61010-1

Environmental

Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Operating Temp.	AC Version: -25°C to 70°C (-13°F to 158°F) Battery Version: -40°C to 85°C (-40°F to 185°F) All versions w/ DC Power: -40°C to 85°C (-40°F to 185°F)
IP Rating	IP66K
Hazardous Certification	Haz Loc version in development
Use Case	Rated for indoor and outdoor use Suitable for wet locations Pollution Degree 4

Wireless Radio

Radio	KCF DART™ Wireless 2.4GHz ISM band
Antenna	Internal dipole antenna
FCC ID	Z5IHB1
IC	24664-HB1

Power

Power Source Options	AC Version: 100-240VAC, 50/60Hz Battery Version: 3.6VDC Lithium D-Size All Versions: 10-30VDC Wired via 4-pin M12 Male Port

Inputs

Collection Mode	Timed Interval Triggered
Input Types	24 VDC rising edge trigger (optional) 7 Sensor Ports (caps available for unused ports)
Sensor Input Types	KCF Wired Vibration Sensor KCF Analog/IEPE Adapter

Wired Vibration Sensor Specifications

General

Weight	100g
Enclosure Material	Polycarbonate Alloy and 303 Stainless Steel
Mounting	#10 or M5 Socket Head, temporary magnet
Certifications (pending)	cETLus, CE per UL/CSA/EN/IEC 61010-1

Environmental

Storage Temperature	-40°C to 125°C (-40°F to 257°F)
Operating Temp.	-40°C to 125°C (-40°F to 257°F)
IP Rating	IP66K
Hazardous Certification	Haz Loc certification planned
Use Case	Rated for indoor and outdoor use Suitable for wet locations Pollution Degree 4

Inputs

Collection Mode	Timed Interval Triggered

Acceleration

Range	±19 g typical, ±16 g nominal
Resolution	0.866 mg nominal
Noise Floor	1.5 mg RMS @ 64 Hz 13.0 mg RMS @ 8192 Hz
Transverse Sensitivity	10% typical
Frequency Response	±5% 0-2700 Hz ±3% 2700-4000 Hz
Samples per Acquisition	4096
Spectral Lines	2048
Sampling Frequency	64 Hz – 8192 Hz configurable

Temperature Sensor

Range	-40°C to 125°C (-40°F to 257°F)
Resolution	±0.5°C (±1°F)

Wired Analog Adapter Specifications

General

Weight	~50g
Enclosure Material	UL94V-0 Polycarbonate Alloy
Mounting	Inline w/ cable

Environmental

Storage Temp.	-40°C to 85°C (-40°F to 185°F)
Operating Temp.	-40°C to 85°C (-40°F to 185°F)
IP Rating	IP66K
Use Case	Rated for indoor and outdoor use Suitable for wet locations Pollution Degree 4

Input and Acquisition

Collection Mode	Timed Interval, Triggered
Input Modes	Voltage or Current (Software Selectable)
Voltage Input Mode:	Measurement Range: -11 to +11 V min Input Impedance: 100 kΩ min Max Input Voltage: ±20V
Current Input Mode:	Measurement Range: -22 to +22 mA min Input Impedance (burden): 100 Ω Max Input Current: ±40 mA
Frequency Response:	DC – 3 kHz @ –3 dB (Voltage or Current Mode)
Sampling Frequency:	64 Hz – 8192 Hz configurable
Supported Sensor Types:	0–10 V –10 V to +10V 4-20mA
Transducer Power Options:	+24VDC from External DC (0.8 A max. / Hub) AC-Powered Hub (+24V, 0.2 A max. / Hub)

KCF technologies

© KCF Technologies, Inc.
336 South Fraser Street
State College, PA 16801
www.kcftech.com

CONTACT US:
(814) 867-4097
sales@kcftech.com

SMARTdiagnostics®

Learn more at kcftech.com/hardware

Wired IEPE Adapter Specifications

General		Input and Acquisition	
Weight	~50g	Collection Mode	Timed Interval, Triggered
Enclosure Material	UL94V-0 Polycarbonate Alloy	Input Type:	AC-coupled voltage-reading with integrated constant current bias
Mounting	Inline w/ cable	Input Range:	±8V minimum
Environmental		Frequency Response:	2 Hz – 5.8 kHz @ –3 dB
Storage Temp.	-40°C to 85°C (-40°F to 185°F)	Sampling Frequency:	62.5 Hz – 16 kHz configurable
Operating Temp.	-40°C to 85°C (-40°F to 185°F)	IEPE Bias Current:	4 mA ±5% fixed (+24V External or AC-Powered Hub required for operation)
IP Rating	IP66K	Compatible IEPE Sensor Types:	Accelerometer Dynamic pressure sensor
Use Case	Rated for indoor and outdoor use Suitable for wet locations Pollution Degree 4		

SD-HUB-1-[magnet][power]-[country]

Magnet Options		Power Options		Country Options	
M	Magnet	**B**	Battery & 24VDC	**NA**	US/CAN/MEX
X	No Magnet	**A**	100-240VAC & 24VDC	**EU**	Europe
				UK	United Kingdom
				BR	Brazil
				SA	South Africa

HUB w/ magnets, battery & DC power:	**SD-HUB-1-MB**
HUB w/ out magnets, AC & DC power, for North America:	**SD-HUB-1-XA-NA**

SD-WVS-1-[cable][magnet][location]-[temperature][foot][connector]

Cable		Magnet		Location		Temperature		Foot Type		Connector	
00	0.5 meter	**M**	Magnet	**R**	Ordinary Location	**T**	Standard	**A**	Pointed Feet	**C**	Standard M12 male 8-pin
05	5 meter	**X**	No Magnet					**B**	Flat Feet		
10	10 meter										

5m cable, magnet, industrial temp, pointed feet, M12 connector:	**SD-WVS-1-05MR-TAC**
10m cable, w/out magnet, industrial temp, flat feet, M12 connector:	**SD-WVS-1-10XR-TBC**

SD-WAA-1-[location][input connector]

Location		Analog Connector	
R	Ordinary Location	**C**	Standard M12 female 4-pin

Analog adapter, 0.5m cable, ordinary location, standard connector:	**SD-WAA-1-RC**

SD-WIA-1-[location][input connector]

Location		Analog Connector	
R	Ordinary Location	**C**	Standard Flying Leads

Analog adapter, 0.5m cable, ordinary location, standard connector:	**SD-WIA-1-RC**

KCF technologies

© KCF Technologies, Inc.
336 South Fraser Street
State College, PA 16801
www.kcftech.com

CONTACT US:
(814) 867-4097
sales@kcftech.com