

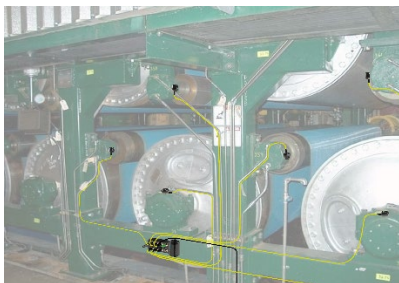
IoT HUB (SD-HUB-1)

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

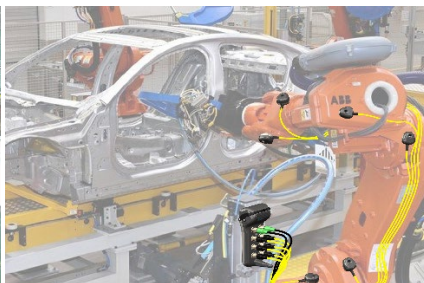


Give Your Machines a **Voice**™



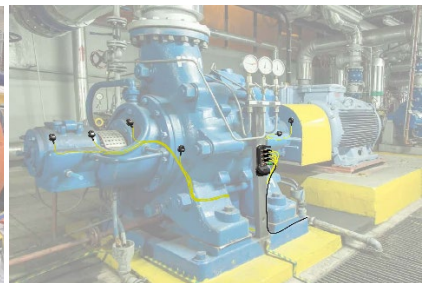
High Temperature

Power is supplied to the IoT HUB, which can be positioned away from extreme environments. 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.

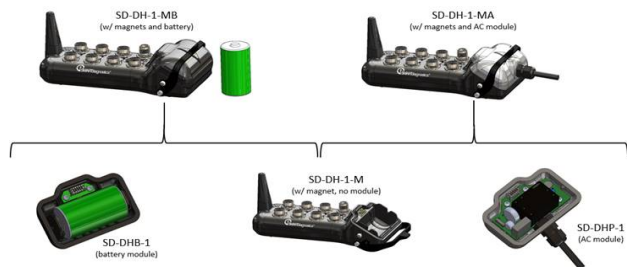


Shielded Machines

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.

IoT Hub Specifications

Mechanical	
Weight	672g (with Battery Power Module), 621g (with AC Power)
Enclosure Material	Radel R5800
Mounting	Magnetic or Hard Mount, #10 or M5 Socket Head
Max. Mounting Bolt Torque	15 in·lb [1.7 N·m]
Environmental	
Storage Temperature	-40°C to 125°C (-40°F to 257°F)
Min. Operating Temp.	-40°C (-40°F)
Max. Operating Temp.	85°C (185°F)
IP Rating	IP67
Hazardous Certification	Class I, Division 2 (planned)
Wireless Radio	
Radio	KCF DART™ Wireless 2.4GHz ISM band
Antenna	Internal dipole antenna
FCC ID	Z5IHB1
IC	24664-HB1
Power	
Power Source Options	3.6 VDC Lithium Thionyl Chloride (battery module) 120-240 VAC (AC power module) External 24 VDC Wired via 4-pin M12 Male Port
Battery Life	{TBD}
Inputs	
Collection Mode	Interval Triggered
Input Types	0-24 VDC edge trigger (optional) 7 Sensor Ports (caps available for unused ports)
Sensor Input Types	KCF Wired Vibration Sensor



FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body. Changes or modifications not expressly approved by KCF Technologies could void the user's authority to operate the equipment.

INDUSTRY CANADA STATEMENT

The term IC before the Certification/Registration number only signifies that the Industry Canada technical specifications were met. This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with the IC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

Wired Vibration Sensor Specifications

Mechanical	
Weight	100g
Enclosure Material	Radel R5800 and 303 Stainless Steel
Mounting	Magnetic or Hard Mount, #10 or M5 Socket Head
Max. Mounting Bolt Torque	30 in·lb [3.4 N·m]
Environmental	
Storage Temperature	-40°C to 125°C (-40°F to 257°F)
Min. Operating Temp.	-40°C (-40°F)
Max. Operating Temp.	125°C (257°F)
IP Rating	IP69
Hazardous Certification	Class I, Division 2 (planned)
Power	
Power Source Options	3.3VDC, provided by the HUB
Power Consumption	{TBD} μ A (standby) {TBD} mA (active)
Inputs	
Collection Mode	Timed Interval Triggered
Input Types	24VDC power (optional) 0-24 VDC edge trigger (optional) 7 Sensor Ports
Sensor Input Types	KCF Vibration Sensor
Acceleration	
Range	+/- 19 g typical, +/- 16 g nominal
Resolution	0.866 mg nominal
Noise Floor	1.496 mg RMS @64 Hz / 13.01 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
Anti-Aliasing Filter	4000 Hz low-pass cut-off, 3 rd order Sallen-Key
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)



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