

IM500 INDUSTRIAL IoT MODULE

FEATURES

- Dual thermal and visual camera
- Secure connection to IoT Cloud
- I/O connections enable external sensors
- Low power consumption
- Optional connection to SCADA/GIS and asset management applications

KEY BENEFITS

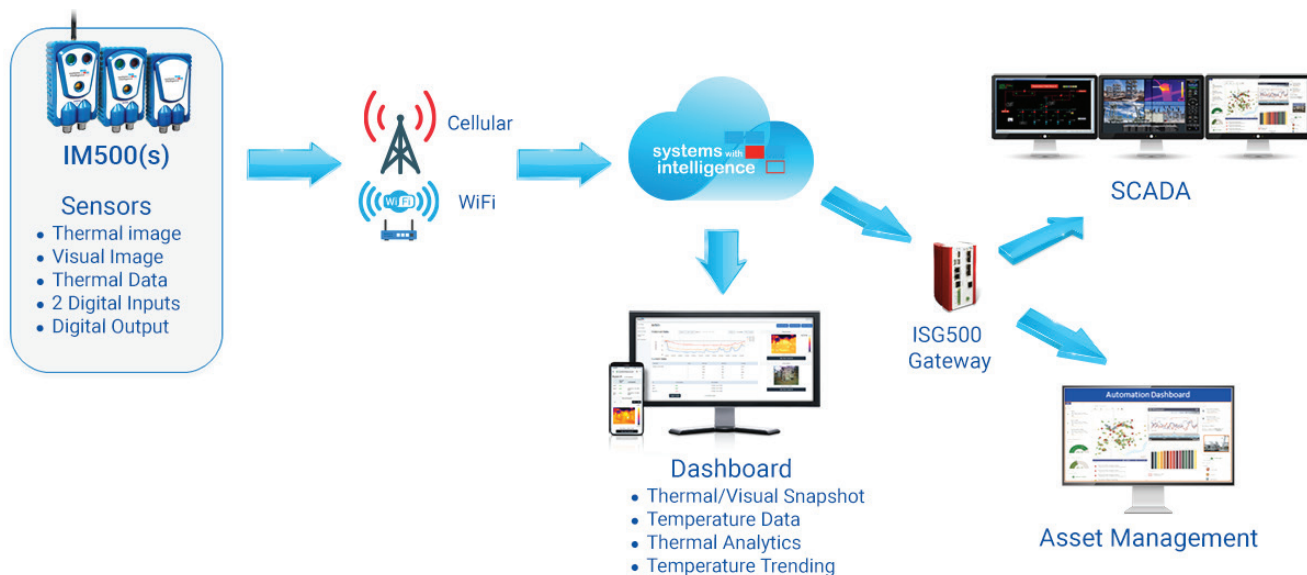
- High reliability operation in extreme environments, low maintenance costs
- Simple to install and maintain
- Early detection of heat, flooding, tampering etc. to prevent failures and outages
- Analytics provide real time operator alerts
- Optimized data usage with adjustable polling rates

The IM500 Industrial IoT Module monitors and collects asset health data from remote sites. Thermal monitoring mitigates the risks of failure from overheating assets and connection points. Analytics detect anomalies and provide automatic warnings. The visual camera provides situational awareness in remote locations.

The IM500 can enable flood warning and other safety, environmental and quality monitoring with externally connected sensors. Signals are transmitted securely from the device to a dashboard on a phone, laptop or other platform. Remote updates ensure the firmware is current as well as enabling customization of the devices.



INDUSTRIAL IoT ARCHITECTURE



DASHBOARD

- Monitor the site and control remote sensor module
- Thermal trending of monitored assets
- Thermal and visual snapshots
- Configure thermal analytics and alarms

CONNECTED SENSORS

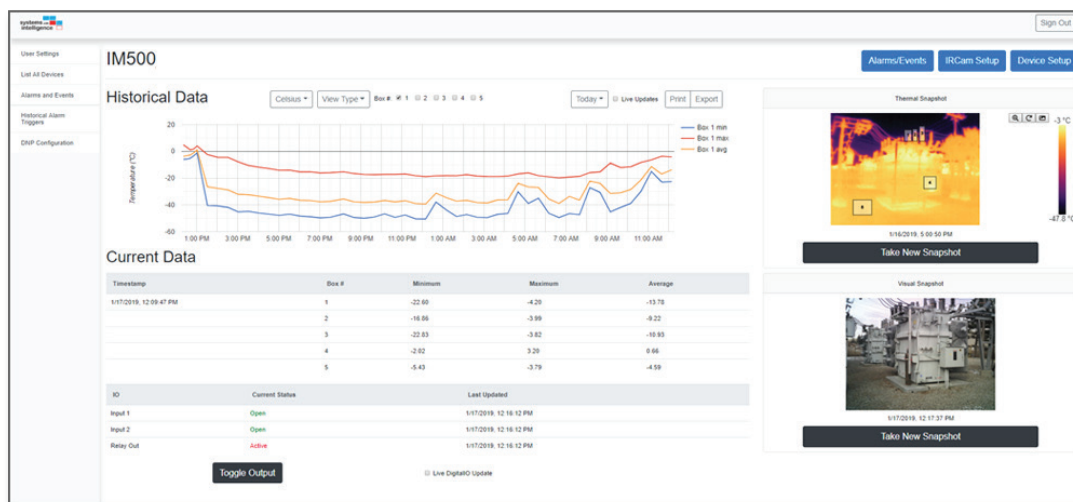
- Onboard I/O allows connection of external sensors
- Monitor water level, door closures, temperature etc.
- Adjust polling rates

COMMUNICATION

- Cellular wireless communications
- Secure encrypted WiFi connection to SWI cloud

UTILITY GRADE

- Designed for the harsh conditions found in electric power environments
- Immune to the effects of EMI, ESD and voltage surges and interruptss



Dashboard example

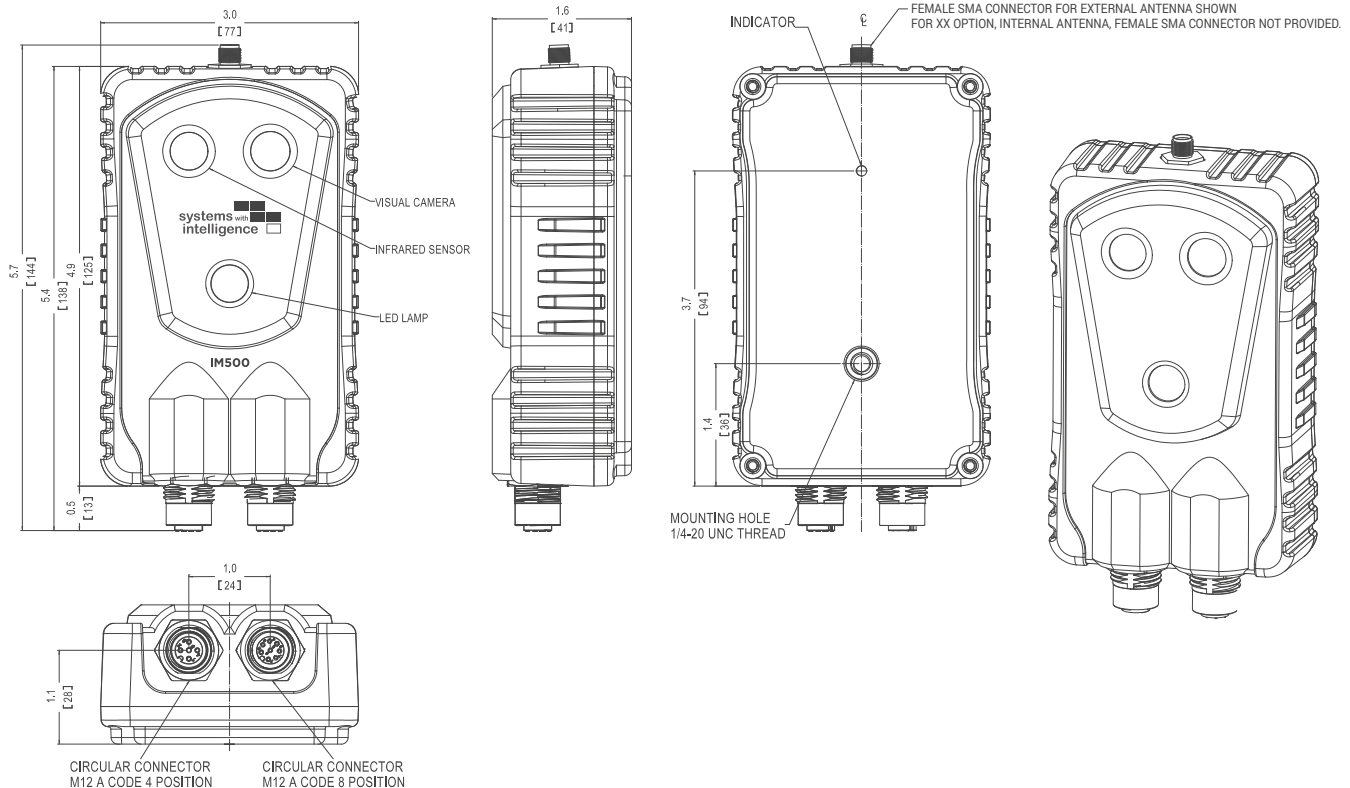


TECHNICAL SPECIFICATIONS

IM MODEL SPECIFICATIONS	
THERMAL	
Resolution	160 x 120 pixels
Detector Type	Uncooled Vox Microbolometer
Spectral range	8 to 14 μ m
Field of View (H)	57°
VISUAL CAMERA	
Resolution	800 x 600 pixels
Sensor	1/4" CMOS
Field of View (H)	54°
FLASH Light	LED, pulsed
NETWORK	
Network Options	• Cellular LTE-M or LTE CAT1 • WiFi IEEE 802.11 b/g/n
Software interface	SWI IoT Cloud
Camera Snapshot	Scheduled or Alarm triggered
Thermal reporting	Thermal box comparison Absolute temperature trigger
Thermal analytics	Up to 15m (49 ft) with 0.3 x 0.3m (1 x 1 ft) target
Others	IO control, Email, Map (location), Historical alarms, Camera Setup
DNP3 (optional)	via SWI CloudNP setup

IO	
Digital Input	2 - wet contact (12VDC)
Solid State Relay	1 - 30VDC, 500mA
POWER	
Vin	12VDC nominal (9 to 14VDC)
Power consumption	~1W nominal (no flash)
Power Supply requirement	at least 5W per device
ENVIRONMENTAL	
IP Rating	IP67
Op. Temp	-15 °C to 70 °C
Storage Temp	-40 °C to 85 °C
MECHANICAL	
Dimensions	78.5mm x 126.5mm x 1.45 mm
Enclosure	UV resistant Plastic
Connector	M12 - 4 pin Power input M12 - 8 pin IO

DIMENSIONS Unit: inches (mm)





CONFIGURATION



Order Code: IM500-CM-OT

Base Unit	Description
IM500	Base Unit - Visual and Thermal Camera. 2 DI and 1 DO. 12VDC Input. 2 Years Warranty. Includes 1m power cable tail.
Communications (CM)	
LT	LTE-M cellular communication (North American)
CAT1	LTE CAT1 cellular communication (Rest of World)
WI	WiFi Communication
Other (OT)	
XX	Internal Antenna
EA01	LTE External Flat Bar Antenna, 1m Cable Length
EA02	LTE External Antenna, Whip Straight
EA03	LTE External Flat Bar Antenna, 3m Cable Length
EA04	WiFi External Flat Bar Antenna, 1m Cable Length
EA05	WiFi External Whip Straight Antenna
EA06	WiFi External Flat Bar Antenna, 3m Cable Length
License and Warranty	
IM500-PL01	1 Year Access to SWI Cloud (2 snapshots per day for LTE-M or LTE-CAT1 version/unlimited snapshots for WiFi version)
IM500-PL02	2 Year Access to SWI Cloud (2 snapshots per day for LTE-M or LTE-CAT1 version/unlimited snapshots for WiFi version)
IM500-PL03	3 Year Access to SWI Cloud (2 snapshots per day for LTE-M or LTE-CAT1 version/unlimited snapshots for WiFi version)
IM500-PL04	4 Year Access to SWI Cloud (2 snapshots per day for LTE-M or LTE-CAT1 version/unlimited snapshots for WiFi version)
IM500-PL05	5 Year Access to SWI Cloud (2 snapshots per day for LTE-M or LTE-CAT1 version/unlimited snapshots for WiFi version)
IM500-WR01	1 year extended warranty for IM500. The warranty can be extended to a maximum of 5 years.
IM500-SA08	Increase snapshot limit to 240 snapshots a month for one year (Avg. 8 snapshots per day)
IM500-SA12	Increase snapshot limit to 365 snapshots a month for one year (Avg. 12 snapshots a day)
IM500-SA24	Increase snapshot limit to 730 snapshots a month for one year (Avg. 24 snapshots a day)
IM500-SA48	Increase snapshot limit to 1450 snapshots a month for one year (Avg. 48 snapshots a day)
IM500-SQ08	Increase snapshot limit to 240 snapshots a month for one year (Avg. 8 snapshots per day)
IM500-SQ12	Increase snapshot limit to 365 snapshots a month for three months (Avg. 12 snapshots a day)
IM500-SQ24	Increase snapshot limit to 730 snapshots a month for three months (Avg. 24 snapshots a day)
IM500-SQ48	Increase snapshot limit to 1450 snapshots a month for three months (Avg. 48 snapshots a day)
Accessories	
SM-A01	Standard mounting arm for IM500
SM-A02	Extended, magnetic quick mount arm, for up to 3 X IM500
CJB5M-05-XXX-XXX	Junction box supports up to 5 x IM500
CJB5M-SL-XXX-MAG	Junction box supports up to 2 x IM500. Input from solar panel. Solar panel incl. Magnetic mount incl. Battery not incl.
PCSM-MF4P-10	Standard male to female power cable from Junction box to IM500. 10m length.
PTSM-M8P-01	Standard pig tail for DIO connector IM500
SM-MAG	Magnetic Ball Base
SM-POL	Pole Mount Base with Clamp for 4" - 6" Diameter Pole
Note: Other configurations of junction boxes are available. For more information, consult support@systemswithintelligence.com.	
Starter Kit Options	
IM500-SK02-LT-XX	2xIM500 starter kit. Includes junction box, cables, mounting arms and 6 months access to the SWI cloud resources.
IM500-SK02-LT-SL	2xIM500 starter kit. Includes solar powered junction box, solar panel, cables, mounting arms and 6 months access to the SWI cloud resources. Battery not included.
IM500-SK03-LT-XX	3xIM500 starter kit. Includes junction box, cables, mounting arms and 6 months access to the SWI cloud resources.
IM500-SK05-LT-XX	5xIM500 starter kit. Includes junction box, cables, mounting arms and 6 months access to the SWI cloud resources.
Note: Other options of start kits are available. For more information, consult support@systemswithintelligence.com.	



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