



# Field Agent\*

## A secure gateway between your operations and the cloud



Data to Cloud



Predix\* Ready



Edge Management

Introducing the next layer in GE's Industrial Internet systems solution. GE's Field Agent technology is the critical link required in an IIoT chain for cloud-enabled analytics. Field Agents provide a rugged, pre-configured solution for secure data collection and conveyance from the machine.

Connect to nearly any industrial asset and leverage GE's Industrial Internet platform to collect data, analyze trends, and uncover insights that improve operations and asset performance.

Build out remote monitoring and diagnostics capabilities safely and securely, utilizing encrypted channels that preserve data time stamp, quality, and fidelity.

Leverage the power of the Industrial Internet by accessing real-time asset performance data and advanced predictive analytics. Armed with this valuable information, operators can optimize equipment uptime and OEMs can proactively maintain and service their equipment fleet, improving operations, growing service revenues, and winning new business.

### Secure Data Collection

Data is a valuable asset in today's digital economy. With a GE Field Agent, data can be securely gathered from industrial machinery or plants and transferred to the cloud. Information can be collected across various industrial protocols and translated to a common format for distribution and analysis.

### Enabling Advanced Analytics

Once machine data is collected and communicated via a Field Agent device, operators can run local analytic models to improve asset performance and predict failures before they occur, leading to reduced costs and new sources of revenue. Field Agents can also run local analytics to improve the performance of OEM machinery locally.

### Powered by Predix\*

GE's Field Agents are powered by Predix, a cloud platform-as-a-service (PaaS) built for industrial workloads. Predix empowers organizations to develop, deploy, and operate industrial apps in the cloud by securely connecting machines and data to people. By integrating Field Agents with other Predix platforms, such as Predix Asset Performance Management (APM) and Brilliant Factory solutions, operators can drive outcomes ranging from the reduction of unplanned downtime to improved asset output and operational efficiency.

### Remote Updates and Troubleshooting

Distributed assets are often located in hard-to-reach or distant locations. Getting to those assets can be quite challenging for an OEM or fleet operator, diverting valuable time and resources.

Field Agent devices are easy to manage with remote access. Updates and security patches can be deployed from a central location down to a Field Agent without traveling to

the device. Field Agents also enable remote troubleshooting of distant assets.

### A Range of Solutions

There are a range of Field Agent solutions designed for a variety of applications. Choose the right combination of form factor, protocol, tag capacity, connectivity, and controller functionality for your specific needs.

### Easy Installation and Connectivity, Including Cellular

Field Agent installation is simple and secure. It requires virtually no IT support from the end user. Once configured, Field Agent devices can be installed and transmitting data to the cloud in a matter of minutes.

The Mini Field Agent carries PTCRB certification and is certified for use on the networks of AT&T and their roaming partners. This certified cellular option enables remote asset connectivity without having to have a LAN, or in the case of OEMs, approval to connect the Mini Field Agent to a customer's network to collect data.

# Specifications

Product	Mini Field Agent* with Cell Modem	Mini Field Agent
Cellular	2G/3G/4G LTE Modem w/ automatic fallback	N/A
Carrier Support	AT&T or user insert-able SIM	N/A
Power Consumption	8.4 Watts (350mA@24VDC)	4 Watts (167mA@24VDC)
Certifications	UL, CE, IECEx and ATEX Zone 2 (0°C to +70°C), UL Class 1 Div 2, PTCRB, AT&T	UL, CE, IECEx and ATEX Zone 2 (0°C to +70°C), UL Class 1 Div 2
MTBF	45 years	w/o WiFi – 47 years w/ WiFi – 46 years
Selection Criteria/Requirements	Predix connectivity, low cost, low power operation, limited cabinet space available, factory reset operation	
Form Factor	Compact, Fanless, Headless, DIN rail mount, optional panel mount	
Dimensions	5.5" L x 1.5" W x 5.25" H	
Software	GE Field Agent built on Predix Machine	
Performance to run Predix applications	Limited	
Processor	800MHz ARM Cortex-A8	
Memory	512MB DDR3 SDRAM 2GB NAND Flash	
I/O	(1x) Ethernet 10/100, (3x) Switched Ethernet 10/100, (1x) RS232, (1x) RS485, (1x) CAN, (1x) USB, (1x) MicroSD, WiFi (Optional), (1x) Discrete Input, (1x) Relay Output	
Application Space	4MB	
Protocols	Includes MODBUS TCP, OPC-UA. EtherNet/IP, OSI PI. Others as published by GE or customer developed, sold separately.	
Tag Through Capacity	Up to 1000 tags/second to Predix Time Series, sold separately.	
Device Security	Trusted Platform Module (TPM) 2.0	
Device Management	Predix EdgeManager, sold separately.	
Temperature & Humidity	-40°C to 70°C (0°C to 70°C ATEX), 5 to 95% non-condensing. Use above 55°C requires installation in a restricted access location.	
Shock & Vibration	IEC 60068-2-27 15g, 11ms (sine wave) & IEC 600068-2-6 10-57Hz, 0.012"ppk displacement 57-500HZ, 2.0g acceleration.	
Input Power	9VDC to 30VDC	

Part Number	Description	Radio certified for use within region
ICMFA000000	Mini Field Agent, No WiFi	No restriction <sup>1</sup>
ICMFA002USO	Mini Field Agent, w/WiFi	US, Canada
ICMFA002EU0	Mini Field Agent, w/WiFi	EU
ICMFA001USO	Mini Field Agent with 4G/LTE Cellular & WiFi, No SIM	US, Canada
ICMFA001US1	Mini Field Agent with 4G/LTE Cellular & WiFi, AT&T SIM	US, Canada
ICMFA001EU0	Mini Field Agent with 4G/LTE Cellular & WiFi, No SIM	EU, Saudi Arabia, Bahrain, Qatar, Kenya, Iraq, Kuwait
ICMFA001EU1	Mini Field Agent with 4G/LTE Cellular & WiFi, AT&T SIM	EU, Saudi Arabia, Bahrain, Qatar, Kenya, Iraq, Kuwait
ICMFA001AE0	Mini Field Agent with 4G/LTE Cellular & WiFi, No SIM	UAE
ICMFA001AE1	Mini Field Agent with 4G/LTE Cellular & WiFi, AT&T SIM	UAE
ICMFA001AU0	Mini Field Agent with 4G/LTE Cellular & WiFi, No SIM	New Zealand, Australia
ICMFA001AU1	Mini Field Agent with 4G/LTE Cellular & WiFi, AT&T SIM	New Zealand, Australia
ICMFA001UM0	Mini Field Agent with 4G/LTE Cellular & WiFi, No SIM	Oman
ICMFA001UM1	Mini Field Agent with 4G/LTE Cellular & WiFi, AT&T SIM	Oman
ICMFAMGMT1YR	One Year Service Contract for Mini Field Agent <sup>1</sup>	N/A
ICMFADATA1GB	Monthly cellular plan for Mini Field Agent with GE provided SIM <sup>2</sup>	N/A
ICMFAACCO01	Mini Field Agent Panel Mount Kit <sup>3</sup>	N/A
ICMFAACCO02	24V DC 1A Power Supply with pre-wired connector for Mini Field Agent (0° to 40°C) and North American three-pronged plug (NEMA 5-15) <sup>3</sup>	N/A
ICFAMAEGD	EGD Protocol Adapter <sup>3</sup>	N/A
ICFAMAMODBUSRTU	MODBUS RTU Protocol Adapter <sup>3</sup>	N/A
ICFAMAOSIPI	OSI PI Web API Protocol Adapter <sup>3</sup>	N/A
ICMAFAETHERNETIP	EtherNet/IP Protocol Adapter <sup>3</sup>	N/A

<sup>1</sup> Required for each ICMFA00XXXX part purchased. <sup>2</sup> Required for each ICMFA00XXX1 part purchased. <sup>3</sup> Optional.