



SINGLE STAGE Positive Displacement



High Voltage

Ensure package is securely isolated from the power supply before starting work VSD/VFD: Wait 10mins after isolating power before gaining access to electrical enclosure

High Pressure

Ensure package is securely isolated from the compressed air system before starting work Ensure any internal compressed air is fully vented before starting work

Observe all regional, site and equipment safety regulations, warnings and instructions

High Temperature

Allow internal parts and pipework to cool before starting work



<u>/</u>

Important information

Notes and recommendations

Installation Type

Installation Steps:





AirTAG Installation Guide



AirTAG and Gateway Router Installation

1 2 AirTAG and Gateway Router



(A) Mount the AirTAG and *Gateway Router on a spare length of DIN rail in the asset electrical enclosure.

B Alternatively, install a length of DIN rail.

Avoid mounting the modules, and routing cables, near high voltage cabling and switchgear.

The *Gateway Router and Antenna can be installed remote from the asset in a separate enclosure if asset electrical enclosure space is limited.



Gateway image shown is generic; the module supplied may differ in terminal arrangement and appearance.

Alternatively, the AirTAG and *Gateway (including antenna) can be located within a separate enclosure mounted on, or adjacent to, the asset.

Metallic conduit(s) should be used to route all cabling between the asset and the remote enclosure.

Ensure the conduit(s), remote enclosure and AirTAG are securely earthed to the asset main earth point.



* For multiple asset systems only one Gateway Router is required, only one asset in the system needs to be fitted with the Gateway Router; see Multiple Asset (System) Installations.

3 Cellular Mobile 'Puck' Antenna





Mount the 'Puck' antenna on a horizontal external surface of the package enclosure. Route the antenna cable to the Gateway Router.

Connect the antenna cable to the Gateway Router; LTE to the main 'LTE' SMA terminal and GNSS to the secondary 'GNSS' SMA terminal.

U The Gateway SMA antenna connection terminals are both identical, ensure the LTE and GNSS cables are connected to the correct terminals.

1: Connect the network 'patch' cable from AirTAG X20 to the Gateway Router network socket.

2: Connect the power supply cable from AirTAG X06 to the Gateway power supply socket.

Gateway image shown is generic; the module supplied may differ in terminal arrangement and appearance

Avoid mounting the modules, and routing cables, near to high voltage cabling and switchgear.

The AirTAG X09 Earth terminal must always be securely connected to the assets main earth point using a 2.5mm² CSA (14AWG) earth cable.

Induction motors can induce some circulatory current flow within the earth paths of the asset; this can result in a small voltage potential difference between the asset earth and a remote earth point. DO NOT connect the AirTAG earth terminal to a remote earth point.



TAG

X09

6 AirTAG Power Supply

Two fused DIN rail mount terminals are provided for the power supply connection to the AirTAG.

100-240Vac, 50/60Hz, 45W max.

The fused terminals and power supply socket images shown are generic; the parts supplied may differ in appearance.

Connect to the asset's main earth point

Some asset control transformers may provide a 100-240Vac secondary output that has sufficient spare capacity:

Some asset control transformers may have a capacity rating higher than the actual requirements of the asset's control circuits. In this instance it may be possible for the AirTAG/Gateway can be powered from the asset control circuit.

For example:



A control transformer [T1] may be rated for 600W and the transformer secondary output fitted with 5.0A fuse or circuit breaker [F1]. A 600W transformer, with a 110Vac secondary, has a maximum output capacity of 5.46A (600W / 110V = 5.46A). If the actual current flow requirement for the asset control circuit is 4.5A there will be a 0.96A spare capacity available from the transformer and 0.5A spare capacity available from the fuse or circuit breaker. An AirTAG, with Gateway Router, will require ~0.35A (38W). With an AirTAG/Gateway connected the total current flow will equate to 4.85A (4.5A + 0.35A). This total combined current flow will not exceed the rating of the control transformer [T1] or the rating of the fuse or circuit breaker [F1]. The AirTAG/Gateway can be connected to, and powered from, the asset control transformer circuit in this instance.

If the 24VDC power supply output of the AirTAG (X06, X07) is being used to power other devices, the power supply requirement of the AirTAG will be higher. The maximum power supply requirement of an AirTAG with the 24VDC power supply fully utilised is 45W (0.41A @ 110Vac).



Some asset control transformers are matched closely to the actual requirements of the asset control circuit. If adding a further 0.35A (38W) AirTAG/Gateway requirement to the transformer output exceeds the capacity of the transformer, or the control circuit fuse or circuit breaker, then the AirTAG/Gateway must be powered from an alternative 100-240Vac, 50/60Hz, power supply source remote from the asset.

Power-up Surge:

Some asset control circuit devices may exhibit an initial surge in current requirement at initial power up. Solenoid values, relays and motor contactors will exhibit this characteristic. If the addition of the AirTAG/Gateway power supply requirement brings the current draw of the asset control circuit close to the rating of the control circuit fuse or circuit breaker, the power-up surge many cause the fuse/circuit breaker to trip. If this occurs the AirTAG/Gateway will need to be powered from an alternative 100-240Vac power supply source remote from the asset.

B Asset Connections

Package Delivery and Internal (Sump) Pressure Sensors

The AirTAG is designed to monitor the signal from the asset controller's pressure sensor. There is no requirement to install a separate dedicated pressure sensor. The AirTAG is able to monitor the signal from a 4-20mA or 0-10V, 0-5V, 1-5V, 0.5-4.5V type pressure sensor. The AirTAG pressure sensor monitoring circuits are designed to monitor the signal without distortion or other influence to asset controller's pressure sensor circuits and will not modify or disrupt the controller's reading of the signal. In the event of an AirTAG failure, power down or power supply disruption, the pressure sensor signal will not be interrupted and the asset controller will continue to be able to monitor the pressure sensor signal as normal.



Delivery Pressure Sensor [7]: Internal (Sump) Pressure Sensor [8]: Connect to AirTAG X11 (# = 1) Connect to AirTAG X12 (# = 2)

- For Voltage pressure sensor(s) the voltage type (0-10V, 0-5V, 1-5V or 0.5-4.5V) must be set in AirTAG pressure sensor configuration. For both 4-20mA and Voltage pressure sensors the range (for example, 0 to 16.0bar) must be set in AirTAG pressure sensor configuration.
- The 'Internal (Sump)' pressure is optional, if the asset does not have an internal pressure monitoring feature do not utilise terminal X12.

If the asset is not equipped with a suitable pressure sensor, or a dedicated pressure sensor is otherwise desired or required, the AirTAG is able to power and monitor the signal from a dedicated pressure sensor.



separate dedicated pressure sensor not supplied



Airflow Sensor (option)

The AirTAG is equipped with a 4-20mA input (X13) dedicated to monitoring an output airflow sensor for the asset.

Normally the AirTAG will calculate and estimate delivery output airflow using values manually entered in AirTAG asset performance setup and configuration. If an Airflow sensor is fitted, and the feature enabled, the AirTAG will use and report the actual monitored airflow.

Where output airflow profile accuracy is required, in particular for variable speed and variable capacity type assets, a package delivery output airflow sensor is recommended.

U The airflow sensor must be located in the pipework connected to the asset package output so that the airflow sensor is monitoring the output airflow of the asset only.





4-20mA Loop Powered (Passive)

4-20mA Self Powered (Active)

U The range (0 to 100.0m³/min, 0 to 3531.5cfm or 0 to 1666.7L/s for example) must be set in AirTAG airflow sensor configuration to match the 4mA and 20mA output signal of the airflow sensor.





Identify the compressed air delivery pipe from the airend (compression element). Mount the sensor on the delivery pipe as close to the airend discharge port as practically possible. Ensure the mounting area surface is clean and free of oil, grease or other substances. Secure in position using the high temperature bonding material and thermal insulating tape.



Parasilico Polysiloxanes Silicon Sealant

AirTAG

Installation Guide

Cure Time: (approx) 30 mins Temperature Resistance: -50°C to 250°C (-58°F to 482°F)

(A) Ensure the temperature sensor has good thermal contact with the surface to be measured.

- ^(B)Ensure no bonding material gets between the sensor and surface to be measured.
- 11 Main Motor Casing Temperature



Mount the temperature sensor against the motor casing at the opposite end from the cooling fan (if applicable). Ensure the mounting area surface is clean and free of oil, grease or other substances. Secure in position using the high temperature bonding material.



A Ensure the temperature sensor has good thermal contact with the surface to be measured.

B Ensure no bonding material gets between the sensor and surface to be measure



12 Ambient Temperature Sensor



Identify the main cooling air intake grill.

Mount the ambient temperature sensor on the outside of the grill/filter assembly such that the cooling air temperature is detected before the air enters the package environment.



13 RS485 Modbus RTU Asset Controller Data Communications



The RS485 data communications cable is supplied with an RJ11 plug pre-fitted. If necessary remove (cut) the RJ11 plug from the cable and reconnect the L1 (A+) and L2 (B-) wires to a plug type that matches the asset controller socket. A selection of plugs is supplied for this purpose.

Modbus RTU:

- AirTAG X18, C2-L1, must connect to the asset controller terminal marked L1, L1+, A, A+ or D+
- AirTAG X18, C2-L2, must connect to the asset controller terminal marked L2, L2-, B, B- or D-
- AirTAG X18, C2-SCRN, must be connected to the asset controller 'screen' or 'earth' terminal

RS485 communication parameters must be set to match the asset controller in AirTAG asset data communications configuration.

14 READY Status Monitoring Input - DI1

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The READY status monitoring input is voltage detecting. If 24-240Vac/dc is detected across the two input terminal pins the input is active (ON). When no voltage is detected the input is deactivated (OFF).

⚠ Do not connect the AirTAG status monitoring terminals to a voltage greater than 240V

The READY status monitoring input is intended to indicate the asset is operational (no shutdown trip, fault or error) and is ready to respond and function normally when required. The READY status input should be ON at all times when the asset is in a Ready, Healthy or 'OK' condition regardless of being in a stopped, standby or running state.



The READY status monitoring input can be connected to an asset controller output that will apply a voltage to the AirTAG input when a shutdown trip, fault or error condition occurs. Alternatively the AirTAG input can be connected to any part of an asset's circuit that will provide a voltage when the asset is Not Ready.

Option:

If asset data communications is not in use, and Ready status monitoring is not required, connect the READY input directly to the asset control system voltage (24V to 240V). The AirTAG will detect the asset to be in a READY condition at all times except when asset power is removed or otherwise disrupted.

Inverse Sense Function:



The READY status monitoring input can be set to function in reverse; 'ON' when no voltage is detected and 'OFF' when a voltage is detected. This function is intended for instances where the voltage across a fault lamp, for example, is being detected. When there is no voltage across the lamp, and the lamp is off, the AirTAG will regard

the asset as Ready, Health or 'OK'. If an asset Fault condition occurs, and the fault lamp illuminates, the AirTAG will detect the voltage and indicate an asset Not Ready or Fault condition.



Asset Data Communications:

When data communications with the asset controller is implemented asset status monitoring is typically derived directly from data and connection to the READY status monitoring input is not required. In some instances asset data communications may not provide sufficient asset status information in which case the READY status monitoring input will still need to be implemented.

15 RUNNING Status Monitoring Input - DI2

OFF	ON
DI#+	DI#+ +V
DIM-	0V

The RUNNING status monitoring input is voltage detecting. If 24-240Vac/dc is detected across the two input terminal pins the input is active (ON). When no voltage is detected the input is deactivated (OFF).

ightarrow Do not connect the AirTAG status monitoring terminals to a voltage greater than 240V

The AirTAG power monitoring feature is designed to automatically detect the asset main motor is running. This feature is available regardless of data communications with the asset controller. In most instances hardwire connection to the RUNNING status monitoring input is not required.

In some instances the asset power consumption characteristics can disrupt successful running status detection. If power derived running status monitoring becomes erroneous the RUNNING input should be implemented. When connected, and a voltage is detected on the input, the AirTAG will automatically switch from power monitoring running status detection to the RUNNING input status detection; there is no requirement to modify AirTAG setup.

If implemented, the RUNNING status monitoring input is intended to indicate the asset main motor is running regardless of the asset being in an off load or on load condition. The RUNNING status input should be ON at all times when the asset main motor is running.



The RUNNING status input can be connected to an asset controller output that will apply a voltage to the AirTAG input when the asset main motor is running. The voltage across the coil of the main motor contactor, for example, can be used for this purpose.

16 LOADED Status Monitoring Input - DI3



The LOADED status monitoring input is voltage detecting. If 24-240Vac/dc is detected across the two input terminal pins the input is active (ON). When no voltage is detected the input is deactivated (OFF).

🗥 Do not connect the AirTAG status monitoring terminals to a voltage greater than 240V

The AirTAG power monitoring feature is designed to automatically detect the asset is in a loaded (on load) condition. This feature is available regardless of data communications with the asset controller. In most instances hardwire connection to the LOADED status monitoring input is not required.

In some instances the asset power consumption characteristics can disrupt successful loaded status detection. If power derived loaded status monitoring becomes erroneous the LOADED input should be implemented. When connected, and a voltage is detected on the input, the AirTAG will automatically switch from power monitoring loaded status detection to the LOADED input status detection; there is no requirement to modify AirTAG setup.

If implemented, the LOADED status monitoring input is intended to indicate the asset is running in a loaded (on load) condition. The LOADED status input should be ON at all times when the asset is loaded and delivering an output.





The LOADED status input can be connected to an asset controller output that will apply a voltage to the AirTAG input when the asset is loaded. The voltage across the coil of the main load solenoid, for example, can be used for this purpose.

17 ALARM Input - DI4



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The ALARM input is voltage detecting. If 24-240Vac/dc is detected across the two input terminal pins the input is active (ON). When no voltage is detected the input is deactivated (OFF).

The ALARM input is independent of configuration or status and is always available for use regardless of asset data communications or hardwire status connectivity. If a voltage is detected across the ALARM input terminal pins the AirTAG will indicate the asset has a general Alarm condition.

	+V Asset Controller
X05	
DI4+	Alarm
DI4-	T
	Lov

The ALARM input can be connected to an asset controller output that will apply a voltage to the AirTAG input when an Alarm (warning or fault shutdown) condition occurs. Alternatively the AirTAG input can be connected to any part of an asset's circuit that will provide a voltage when the asset has an Alarm condition.



The ALARM input can be connected to a Fault lamp. If an asset Fault condition occurs, and the fault lamp illuminates, the AirTAG will detect the voltage and indicate an asset Alarm condition.



18 3-Phase Power Supply Voltage Monitoring

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Connect the fused 3-Phase voltage monitoring cables to the outlet side of an auxiliary or controls power supply MCB/Fuses.

The AirTAG must be able to detect the package main incoming power supply voltage at all times.

L1, L2 and L3 orientation is important.



315mA, 600V 6.3x32mm, interrupt: 10kA

19 3-Phase Power Supply Current Monitoring



Mount the current monitoring sensors (CT1, CT2 and CT3) onto the package main incoming power supply cables (→ note CT orientation arrows).

Ensure the two halves of the current sensor body are correctly aligned and securely clipped together.

The AirTAG must be able to detect the combined current consumption of all package electrical power consuming devices (main motor, cooling fan motor and control system for example).

L1, L2 and L3 orientation is important.

If the package main incoming power supply consist of two cables per phase mount the current monitoring sensors (CT1, CT2 and CT3) on one of the cables for each phase (→ note CT orientation arrows).

In this instance each current sensor will detect half the phase current; to ensure correct power calculation the AirTAG setup must be set for 'Two Cables per Phase'

2 Cables per Phase CT Amps Rating Selection: Select the CT Amps Rating to suit (Package kW Rating x 0.5)

Example: for a 250kW Package:

250kW x 0.5 = 125kW Select a 400Amp CT



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20 Variable Speed Monitoring (if applicable)



Mount the frequency monitoring current sensor (CT4) onto one of the main motor cables (> note CT orientation arrow).

Ensure the two halves of the current sensor body are correctly aligned and securely clipped together.



If the main motor cables consist of two cables per phase mount the frequency monitoring current sensor (CT4) on one of the phase cables (-> note CT orientation arrow).

CT4 may differ in rating from CT1, 2 & 3 dependent on main motor size and number of cables per phase.

CT Amps Rating Selection Guide

Scaled to select CT rating suitable for total package power where HP/kW = asset nominal main motor power rating





Multiple Asset (System) Installations



A multiple asset system is a group of assets that are all connected to, and contribute to, the same output. The assets do not need to be next to each other in the same location but each must be within 100m (328ft) network cable run of each other.

Only one Gateway Router is required for a multiple asset (system) installation. Connect all asset AirTAG's to the Gateway Router linking from one AirTAG to the next.



* CAT5/5E/6, STP network 'cross-over' cable(s) are not supplied and must be sourced locally.



LED Indicators



1: 🔴 Error	OFF Pulsing On/Off ON	No Error, OK Data Communication with Asset fault AirTAG fault: if 'On' LED pulsing on/off = AirTAG internal issue detected if 'On' LED off = AirTAG sensor fault
2: 🔵 Com Cloud	OFF Pulsing On/Off ON	No Connection to the AirCloud Server Remote VPN session in progress Connected to the AirCloud Server
3: 🔵 Com GW	OFF ON	No Connection to the Gateway Router Connected to the Gateway Router
4: 🔵 On	OFF	AirTAG fault: if 'Error' LED on = AirTAG sensor fault
	Pulsing On/Off	AirTAG functioning and all enabled sensors OK
5: 🔵 Power	OFF ON	No Power AirTAG Power On
6: 🔘 -		not used
7: 🔵 Ready	OFF ON	Asset Status = Not Ready, Not Healthy, Not Available, Shutdown Trip Asset Status = Ready, Healthy, OK
8: 🔵 Running	OFF ON	Asset Status = Not Running, Stopped, Standby Asset Status = Running (on load or off load)
9: 🔵 Loaded	OFF ON	Asset Status = Unloaded, Off Load Asset Status = Loaded, On Load
10: 🔵 Alarm	OFF ON	OK, No Alarm Asset Alarm Condition (AirTAG input DI4 = on)



Post Installation Checks

Apply Power to the Asset (and auxiliary AirTAG power supply if applicable)



- 1: Check AirTAG LED (Power, 5). If the LED fails to illuminate check the power supply to the AirTAG.
- 2: Check AirTAG LED (On, 4). If the LED fails to illuminate and pulse on/off check all sensor connections to the AirTAG (CT current sensors, Pressure Sensor(s) and Temperature Sensors as applicable) and correct and secure.
- 3: Check AirTAG LED (Error, 1). If the LED is pulsing on/off check the Data Communications connection with the Asset controller. If the LED is on, check the status of LED (On, 4), step 2 above. If LED (On, 4) is off contact your AirTAG supplier.
- 4: Check AirTAG LED (Com GW, 3). If the LED fails to illuminate after a 1 minute period check the Gateway Router power is on and the network cable connection to the Gateway Router is correct and secure.
- 5: Wait 5 minutes for the Gateway Router to establish a wireless connection with the mobile/cellular service provider and for the AirTAG to establish communication with the remote AirCloud server. If AirTAG LED (Com Cloud, 2) fails to illuminate after this period check that the Gateway cellular/mobile antenna is connected securely.
- 6: Check AirTAG LED (Ready, 7). If the LED fails to illuminate check that the asset does not have a fault condition and that the connections to AirTAG DI1 (Ready) is configured correctly and secure.

Start and Run the Asset



- 7: Check AirTAG LED (Running, 8). If the LED fails to illuminate when the asset is running: a) check the AirTAG asset setup and performance figures are correct
 - b) implement the hardwire RUNNING connection option to AirTAG DI2 (Running)
- 8: Allow the asset to load. While the asset is on load check LED (Loaded, 9). If the LED fails to illuminate when the asset is running on load:
 - a) check the AirTAG asset setup and performance figures are correct
 - b) implement the hardwire LOADED connection option to AirTAG DI3 (Loaded)



Run the asset for a 10-15 minutes period.

While the asset is running connect to the AirMATICSTM Cloud Server and navigate to the asset (or contact someone else who is able to do so) and ensure status, operational data and sensor values are all present and align with expectation.



FAULT Finding

AirTAG/Gateway Communications

AirTAG power	1	Check the asset power supply (or auxiliary AirTAG power supply if applicable)
supply LED not	2	Check fuses / MCB
illuminated	3	Check the power supply connections to the AirTAG
Gateway power supply LED not illuminated	1	Check the voltage across the pins of the AirTAG X06 '+24VDC output', ensure the AirTAG X06 to Gateway power supply cable is securely fitted
No AirTAG to Gateway	1	Check the 'Patch' network cable connection from AirTAG X20 to Gateway LAN socket; ensure the cable is not connected to the Gateway WAN socket (if applicable)
communications	2	Renew the 'Patch' network cable
	3	For AirTAG to AirTAG daisy chain 'system' networks ensure all network cables are connected correctly and each AirTAG in the system is operational (see Multi Asset System connection diagram)
	4	Renew the AirTAG to AirTAG 'cross-over' CAT5E/6 STP network cable(s)
No or weak cellular / mobile	1	Ensure the antenna is connected to the Gateway Mobile/Cellular Router terminals correctly; for example, LTE cable to the LTE terminal and GNOSS cable to the GNOSS terminal.
signal	2	In instances where the antenna cables are longer than required, DO NOT 'coil' the cables
	3	Ensure the antenna cables are routed away from high power cables, switchgear, VSD/VFD units or other sources of electrical interference
	4	Re-position the antenna remote from the asset; on an outside wall of the building for example
	5	Use a higher gain type antenna
No.or	6	Re-locate the Gateway and antenna to a remote from asset location
intermittent	2	Check cellular/mobile signal strength: greater than -100dBm is preferable
CLOUD server	2	Ensure the SIM Card is inserted in the helder correctly: ensure the SIM Card contacts are
connection	3	clean and undamaged
AirTAG Sensors		
No voltage on one, two or all	1	Check the AirTAG voltage monitoring cables are securely fitted to the asset power supply phases L1, L2 & L3 and the asset auxiliary Fuse/MCB has not tripped (if applicable)
three phases	2	Check the AirTAG voltage monitoring cable in-line fuse(s)
No or low	1	Check the current sensor body halves are aligned and securely clipped together correctly
from one. two or	2	Ensure current sensor CT1, CT2 & CT3 connections to the AirTAG are correct and secure;
all three current	3	Ensure all current sensor orientation 'arrows' are facing the same way
sensors		
No variable	1	Check C14 current sensor body halves are aligned and securely clipped together correctly
reading	2	Ensure CT4 current sensor connections to the AirTAG are correct and secure; ensure current sensor wire orientation is correct
No temperature	1	Ensure sensor is connected to the correct AirTAG pins; wire orientation is not important
sensor reading	2	Check DC resistance of the sensor; 1000 ohms @ 0°C(32°F) to 1365 ohms @ 100°C (212°F)
	3	Renew the sensor
No pressure sensor reading	1	Check the wire connections to the AirTAG input terminals and ensure the correct wires are connected to the correct terminal pins for the sensor type; wire orientation is important
		··· · · ·
(4-20mA)	2	Check the sensor +V connection from the asset controller to the sensor +V terminal is unmodified and remains connected and secure.
(4-20mA)	2 3	Check the sensor +V connection from the asset controller to the sensor +V terminal is unmodified and remains connected and secure. Check DC current flow in any one of the two sensor wires (4.0mA @ 0.0bar)

No Pressure sensor reading	1	Check the wire connections to the AirTAG input terminals and ensure the correct wires are connected to the correct terminal pins for the sensor type; wire orientation is important
(DC Voltage)	2	Check the sensor +V connection from the asset controller to the sensor +V terminal is
		unmodified and remains connected and secure. Check the continuity from the asset controller
		0V connection to the sensor 0V terminal remains uninterrupted and is secure.
	3	Check the continuity from the sensor output voltage signal terminal to the asset controller
		voltage signal input connection remains uninterrupted and is secure.
	4	Check the DC voltage power supply to the sensor (+V) and (0V)
	5	Renew the sensor
	4 5	Renew the sensor

AirTAG to Asset Controller Data Communications

No data	1	Ensure the Modbus cable is connected to AirTAG X18; DO NOT use terminal X17
communication with asset controller	2	Check the orientation of the wire connections: AirTAG C1L1 must be connected to asset controller L1, L1+, A or A+ and C1L2 to L2, L2+, B or B+; if in doubt swap the wire connections at the TAG end
	3	Ensure the RS485 cable is securely earth shielded and routed away from high power cables, switchgear, VSD/VFD units or other sources of electrical interference
	4	Ensure the asset controller is equipped with the correct software, and setup, for remote communications
	5	Ensure the asset controller and the AirTAG have the same RS485 start bit, data bits, stop bit(s), baud rate and parity settings
	6	Ensure the asset controller type, and software revision, is consistent with OEM Modbus RTU communication documentation

(((•)) TAG, Gateway and Antenna Location and Cabling Electromagnetic Interference

Electromagnetic interference from high voltage cables, switchgear and high frequency switching components, in particular variable speed/frequency drives (VSD / VFD), can disrupt the operation of electronic equipment. Care should be taken when locating electronic control devices and routing signal, data and low voltage control cabling.



Never route an electronic device ground (earth) cable with high voltage power cables. Always ensure the electronic device ground (earth) cable is connected directly to the package main ground (earth) point and not looped from a ground (earth) terminal of another component.

If it is necessary for a signal, data or control cable(s) to cross the path of a high voltage power cable(s), always cross at a right angle.

Always ensure the TAG earth terminal is securely connected to the asset's main earth connection point; never connect, or daisy chain, the earth connection to the earth terminal of another device.

Never locate the TAG, Gateway or Antenna near to high voltage power cables, high voltage switchgear or a variable speed/frequency drive.

Variable speed/frequency drives switch high voltages at high frequencies and are a strong source of electromagnetic interference.





High voltage power cables and high voltage switching devices are surrounded by electromagnetic fields and radiated interference. Radiated interference obeys an inverse square law; if the distance from an interference source is doubled the interference level will reduce by a factor of four. Locate electronic control devices as far away as possible from strong sources of electromagnetic interference.