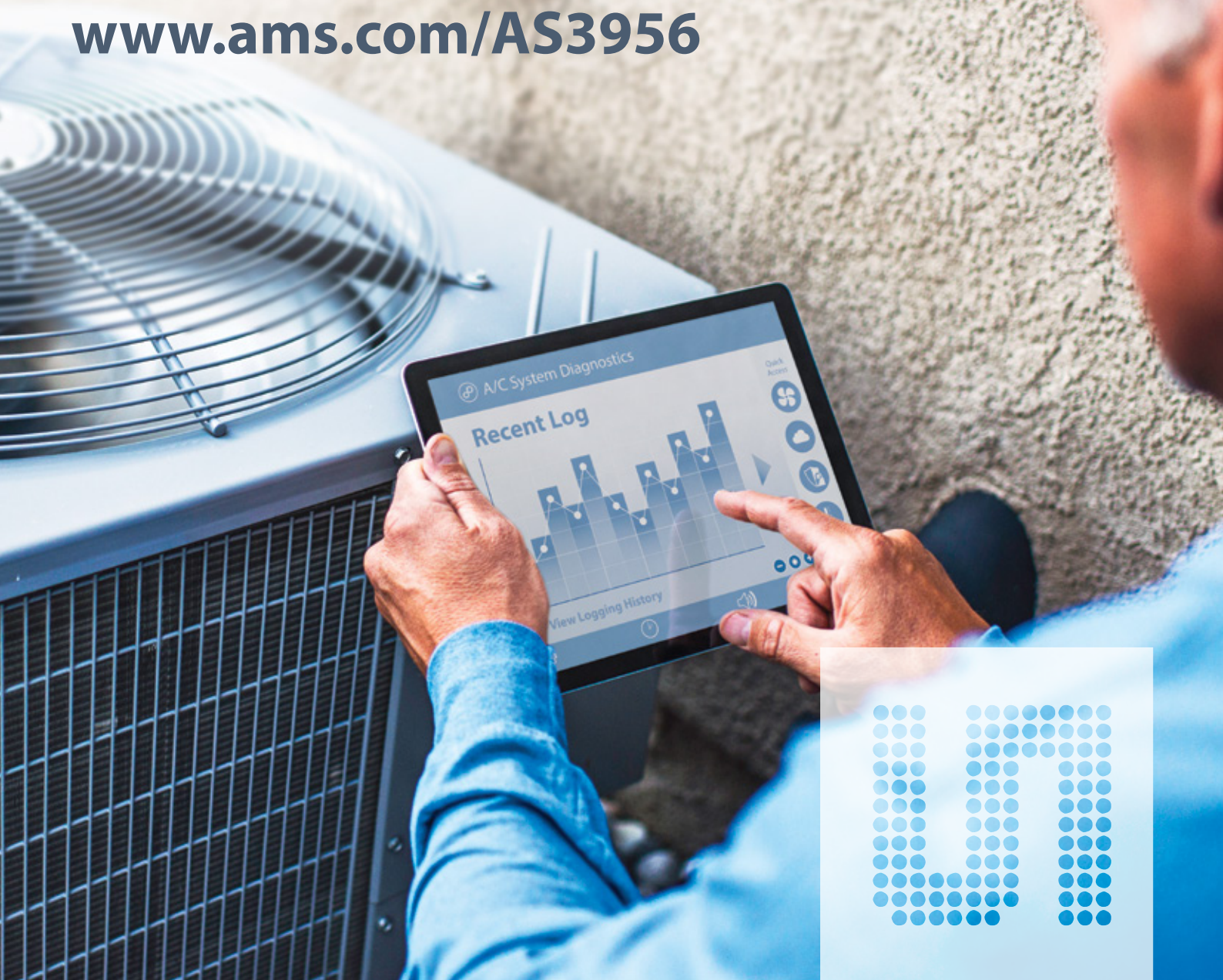


Product Document

NFC Sensor Interface for Industrial IoT

www.ams.com/AS3956



AS3956 – NFC Sensor Interface Tag IC

- High reliability, extended temperature range
- MCU interfacing options in a small form factor

**Sensing
is life.**

General Description

AS3956 Dynamic NFC Sensor Tag IC meets industrial-grade quality standards and provides very high reliability in mission-critical applications and in end products with a long operating lifetime. Thanks to a high sensitivity ISO14443A frontend and large integrated resonance capacitor, AS3956 offers standalone NFC passive tag functionality in a small form factor.

The AS3956 dynamic tag acts as a contactless bridge between sensors and any NFC reader, such as a smartphone, through a host microcontroller. Fast system integration

and high speed data transfer are guaranteed by the available SPI and I²C interfaces and optimized protocols (Tunneling mode and Extended mode), allowing bidirectional communication between the device microcontroller and an external NFC compliant device or ISO14443A reader device. AS3956 is able to operate fully powered by the RF field, without any external supply. This, combined with an advanced energy harvesting feature, greatly increases battery life time or even allows battery-less designs.

Benefits

- Standalone NFC passive tag functionality
- High endurance EEPROM memory reaches industrial grade quality
- Allows battery-less designs
- Flexible system integration and high speed data transfer
- No external components required

Applications

- Industrial and Internet of Things (IoT) applications exposed to harsh operating conditions and extreme temperatures
- Products requiring an extended operating lifetime, such as HVAC equipment, medical and healthcare devices, wireless sensors for civil infrastructure
- Mission-critical products that require a zero failure rate
- Feature and biometric payment cards

Features

- Fully compliant to NFC Forum Type 2 & 4 Tag, ISO14443A up to Level 4, EMVCo
- Standalone passive tag functionality
- SPI and I²C slave interfaces, with wide supply range (1.65V to 5.5V)
- 4kbit industrial grade EEPROM memory
- 32-bit password protected memory
- Tunneling and Extended Modes for high speed bidirectional data transfer
- Energy harvesting up to 5mA@4.5V
- Available as bare die, thin WL-CSP (0.3mm height), MLPD-10

AS3956 Block Diagram

