

AION420 TECHNICAL DATA SHEET



The AION420 is a compact IoT bridge for wirelessly connecting industrial 4–20 mA sensors to LoRaWAN® and mioty® networks. The device acquires analog process signals and transmits the measured values to existing IoT platforms in an energy-efficient manner, without requiring additional cabling or local infrastructure.

Since the AION420 is part of the 4–20 mA current loop, the device is powered by an external power supply. This makes it particularly suitable for applications with an existing power supply and provides a reliable connection between existing measurement points and modern IoT infrastructures.

For easy integration into a wide variety of systems, the AION420 is available both as a terminated version for direct connection to a sensor and as a loop-through version for integration into existing sensor cabling. This allows existing 4–20 mA sensors to be digitized quickly and cost-effectively. Typical applications include monitoring levels, pressures, flow rates, temperatures, and other process variables in industrial, energy, water, and environmental applications.

VERSIONS

Part Number	Class	Version	Configuration	Interface
S-AION-LOEU-420	LoRaWAN Class A	Terminated	BLE	4-20 mA (2 channels)
S-AION-MIOTY-420	mioty Class A	Terminated	BLE	4-20 mA (2 channels)
S-AION-LOEU-420-3L	LoRaWAN Class A	Loop	BLE	4-20 mA (2 channels)
S-AION-MIOTY-420-3L	mioty Class A	Loop	BLE	4-20 mA (2 channels)

GENERAL FEATURES

FEATURE	VALUE	UNIT
Dimensions (W x H)	99.1 x 50 x 31	mm
Weight	130	g
Operating temperature	-20 to 80	°C
Storage temperature (recommended)	15 to 25	°C
Relative humidity during operation	10 to 90	%
IP rating	IP67/IP65	
Traffic light function/Visual feedback	LED	
Acoustic alarm function	Buzzer	
Provisioning and Configuration	BLE	
Material	Housing: PA; Cover: PA; Cover gasket: TPE; M12 gasket: FKM	
BLE Antenna	Integrated	
RF Antenna	Integrated for all versions	
Accelerometer	Optional	
Batteries	None	
Primary cell type	-	
Suitable for outdoor use	No	

CONNECTIVITY AND RF SPECIFICATIONS

FEATURE	VALUE	UNIT
RF Standards		
Frequency	868	MHz
LoRaWAN®/mioty® EU		
Transmit power	14	dBm
LoRaWAN®/Mioty® EU		
LoRa® MAC layer version	1.0.4	

SENSOR SPECIFICATION 4-20 MA INTERFACE

FEATURE	VALUE	UNIT
Type Accuracy	Absolute error 0.05 mA + Relative error 0.25%	

TEMPERATURE SENSOR SPECIFICATION

Characteristic	VALUE	UNIT
Temperature Range	-30 to +85	°C
Accuracy 0°C to 70°C	±2	°C
Accuracy from -40°C to +85°C	±1.5	°C
Resolution	1	°C

CONNECTIONS

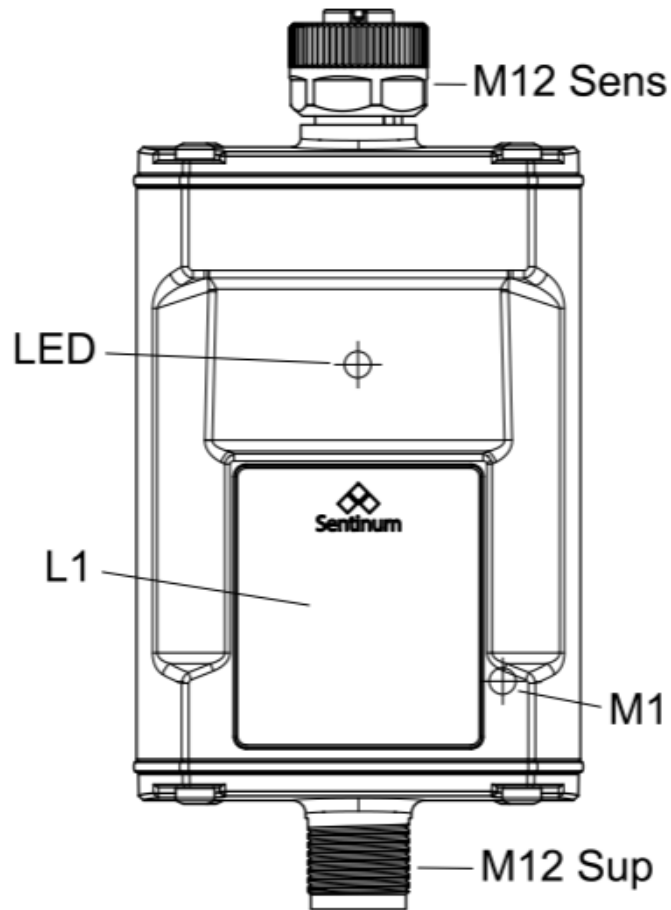
Feature	VALUE	UNIT
Sensor side	A-coded, female with cap nut	
Supply side	A-coded, male - Terminated version: 2-pin, VCC and GND - Looped-through version: 4-pin, VCC, GND, Isense 1, Isense 2	°C

ELECTRICAL PARAMETERS

Feature	VALUE	UNIT
Operating voltage	9 to 26	V
Rated voltage	24 V	V
Max. Current Consumption	0.2	A
Max. current-carrying capacity	0.3	A

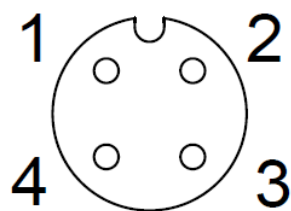
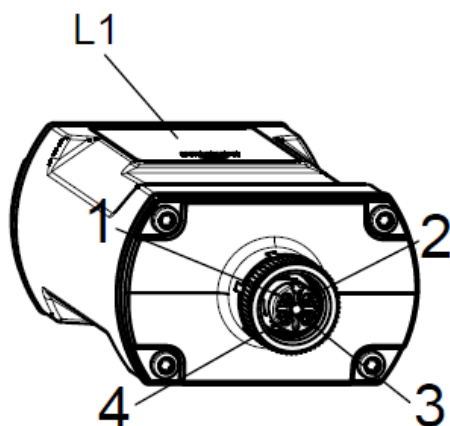
INSTALLATION, ASSEMBLY, AND WIRING

Key Components



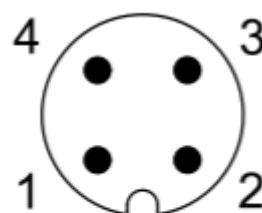
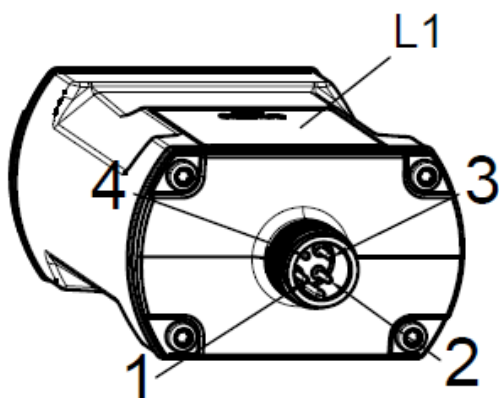
M1	Magnetic switch 1
M12 Sup	M12 Connection (Supply Side)
LED	LED - visual feedback and indicator
M12 Sens	M12 connection, sensor side
L1	Labeled

WIRING DIAGRAM AND PIN ASSIGNMENT (SENSOR SIDE)



1 = VCC
 2 = 4 ... 20 mA
 3 = GND
 4 = 4 ... 20 mA

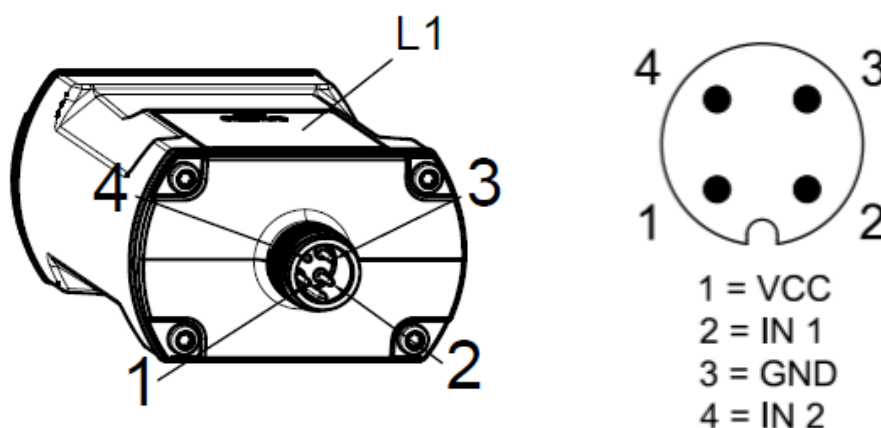
WIRING DIAGRAM AND PIN ASSIGNMENT (SUPPLY SIDE) FOR THE TERMINATED VERSION



1 = VCC
 2 = GND

The terminated version of the AION420 is designed for direct connection to a 4-20 mA sensor. The device is powered via the supply connection by an external power source and serves as the end point of the measurement chain. This version is not designed to pass on the 4-20 mA signal. The terminated version is particularly suitable for new installations or applications in which the sensor is detected exclusively by the AION420.

WIRING DIAGRAM AND PIN ASSIGNMENT (SUPPLY SIDE) FOR THE LOOPED VERSION



In addition to providing power, the looped version of the AION420 also allows the 4-20 mA signal to pass through. This enables the AION420 to be integrated into existing measurement circuits without interfering with the existing signal processing. The measurement signal is acquired by the device and simultaneously transmitted to downstream systems, such as PLCs, data loggers, or process control systems. This version is particularly suitable for retrofits and applications where the existing infrastructure is to continue being used.

