



FlatMesh™

Product Data Sheet: Digital Interface Node



The Digital Interface Node is a robust IP66/IP67 rated digital data logger that transforms your data collection from manual to automated sampling. This wireless digital data logger is compatible with a large variety of sensors that carry a digital output and enables a simple connection to the Senceive back-end & front-end platforms. Interact and manage your data online and change reporting times and thresholds remotely.

Ideal for many applications including:

- Understanding diaphragm wall movements when installing in-place inclinometers in large excavation and construction projects.
- Managing your geotechnical assets in mining, railways & highway using piezometers, extensometers and inclinometers.
- Environmental applications such as continuous logging of weather station data including precipitation, wind strength and temperature.

Key features

- Versatile mounting options
- NFC compatibility, enabling on the spot adjustments to the node
- “Sleep mode” functionality
- Power sensors requiring up to 20 Watts
- Configurable output voltage enabling longer sensor chains
- Waterproof to IP66 / IP67
- Compatible with our InfraGuard™ responsive reporting option for networked and dynamic reporting.
- Hardware support for these connection protocols: RS232, RS422, RS485, SDI-12, MODBUS and CAN
- Low power, long battery life with changeable batteries
- Automatic power sharing and switchover between battery and external DC supply
- Firmware is remotely upgradeable over the air via the gateway, reducing costly site visits

Harnessing intelligent monitoring technology to keep people and infrastructure safe

Contact us info@senceive.com

[Senceive.com](https://www.senceive.com)



Digital Interface Node

Compatible Sensors

| Manufacturer | Product | Known Limitations |
|----------------------------|---|---|
| GeoSense | In-place Inclinator | TBD Validated with 50x bi-axial IPI sensors with battery powered Digital Interface Node ModBus variant only |
| Geokon | Model 6180 Vertical IPI System Model 6185 Horizontal IPI System | Validated with 64x IPI sensors with battery powered Digital Interface Node |
| Sisgeo | BH-Profile In-place Inclinator MD-Profile Array Horizontal In-place Inclinator MEMS In-place Inclinator | TBD |
| Osprey Measurement Systems | In-place Extensometer | TBD Validated with 50x extensometer segments with battery powered Digital Interface Node |

Physical Specifications

| Parameter | Value |
|--|---|
| Dimensions excluding antenna and bracket | 246 x 137 x 88 mm |
| Dimensions including antenna and bracket | 246 x 303 x 106 mm |
| Total Mass | 836 g without batteries 1090 g with 2 batteries 1346 g with 4 batteries |
| Housing Material | Polycarbonate |
| Protection | IP66 and IP67 |
| Mounting Options | Pole mount, wall mount |
| Operating Temperature Range | -40°C to +85°C |

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Digital Interface Node

FlatMesh Radio Specifications

| Parameter | Value |
|---|--|
| Communication Type | Proprietary FlatMesh v3 Mesh Networking Protocols IEEE 802.15.4 compliant |
| Frequency Band | 2400 – 2485 MHz ISM Band |
| Maximum Transmit Power (EN 300 328 v1.8.1) | 6.5 dBm |
| Maximum Permitted Antenna Gain | 4 dBi |
| Range | Up to 300 m depending on the environment and fitted antenna Consult with Senceive for your application |
| RF Module | Senceive F3N_NF |

Auxiliary Power Input

| Parameter | Value |
|---------------------------|---|
| Connector | M12 Male 3-pole A-coded Screw clamp |
| Input Voltage (DC) | 10 V to 28 V (recommended 24 V) |
| Maximum Input Current (A) | 4A fuse limited |
| Power (W) | Minimum 40W recommended Max Limitation: <100W Limited Power Source |



Digital Interface Node

Internal Batteries

| Parameter | Value |
|---------------------|--|
| Battery Type | Primary lithium-thionyl chloride (Li-SOCl ₂) with Hybrid Pulse Capacitor (HPC) Consult with Senceive for battery recommendations for extremely low temperature climates |
| Nominal Voltage | 3.6 V |
| Nominal Capacity | 19Ah |
| Cable and Connector | 75mm 22AWG UL1007 onto JST-PAP-02V-S |
| User serviceable | Yes |
| Quantity | 2 or 4 required |

Sensor Interface

| Parameter | Value |
|---------------------|---|
| Connector | M12 Female 8-pole A-coded Screw clamp |
| Output Voltage (DC) | 0.8 V to 22 V |
| Output Current | Up to 2A |
| Digital Interfaces | RS232 RS422(1) RS485(1) SDI-12 CAN (1): With software-controlled termination and biasing |

Certifications

- CE, FCC, IC, ACMA - pending

Registered design DM/232 478



Digital Interface Node

Digital Interface Node Supported Devices - Battery Life in Years

| Manufacturer | Product Family | Product Name | Max no. sensors | External power required | 5-min sampling | 1-hour sampling | | 6-hour sampling | |
|----------------------------|-----------------------|-----------------|-----------------|-------------------------|----------------|-----------------|------------|-----------------|------------|
| | | | | | 5 sensors | 5 sensors | 25 sensors | 5 sensors | 25 sensors |
| Osprey Measurement Systems | In Place Extensometer | IPX | 50 | No | 5.5 years | 15 years | 9 years | 15 years | 15 years |
| Geokon | In Place Inclinometer | Model 6180/6185 | 64 | No | 2 years | 9 years | 3 years | 15 years | 10 years |
| Geosense | In Place Inclinometer | IPI | 50 | No | 2 years | 7 years | 3 years | 15 years | 10 years |
| Sisgeo | MD Profile | MD00 | 50 | No | 1 years | 6 years | 2 years | 12 years | 9 years |
| Sisgeo | BH Profile IPI | S430 | 50 | No | 1 years | 6 years | 2 years | 12 years | 9 years |
| Sisgeo | In Place Inclinometer | S410 | 50 | No | 1 years | 6 years | 2 years | 12 years | 9 years |



Digital Interface Node

Ordering Information and Accessories

| Model | Description |
|---|---|
| F3N1 - DIN | FlatMesh Digital Interface Node (excluding batteries) Supplied with FF-MP-DIN-PM: pole mount (with jubilee clip) |
| F3N1 - DIN (S) | FlatMesh Digital Interface Node (including standard batteries) Supplied with FF-MP-DIN-PM: pole mount (with jubilee clip) |
| F3N1 - DIN (LT) | FlatMesh Digital Interface Node (including low temperature batteries) |
| FS-DINCON11 | Connector for Digital Interface Node sensor |
| FF-MP-DIN-WM | Wall mount |
| FF-MP-DIN-WMK | Magnetic wall mount |
| SP-CO3168-2 | Standard batteries (2 pack) |
| SP-CO3169-2 | Low temperature batteries (2 pack) |
| FX-C-5M | N-type antenna extender (5 m) |
| FX-C-2M | N-type antenna extender (2 m) |
| FX-C-1M | N-type antenna extender (1 m) |
| FA-MK-CB | N Type Antenna Bracket for 6.35 mm screw / tie wrap / jubilee clip |
| FA-MK-CBM | N Type Antenna Bracket with magnets |
| FP-AC40DIN-UK FP-AC40DIN-EU FP-AC40DIN-US FP-AC40DIN-ANZ | Mains power supply with pre-fitted connector to power the Digital Interface Node Choose plug to suit |