FICUS™

Edge Series...

# MachLogic - mini

Multipurpose IIoT Device

INDUSTRY 4.0

Analog Input

Digital Input

Digital Output

Cloud Gateway functionality

(Two-way Communication)


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# Features

## How it Works

The device can be programmed for multiple industrial use cases. It has on-board hosted configuration webpage. Enter required details such as mapping tables for input current/voltage, server URLs, credentials, and other details in the configuration file. Upload the file and reboot the device. For more details, contact us.

## Industry

- Manufacturing
- Engineering
- Sugar
- Pharmaceutical
- Others

## Applications

**Suitable for all use cases where you need to read industrial data, communicate data or control your industrial equipment remotely from cloud/server application.**

- Cloud Gateway (Two-way Communication).
- Data retrieval (through Modbus/RS485) from devices such as Energy Meter, Flow Meters etc.
- Data retrieval (through Modbus/RS485) from PLCS, Chillers or Boilers.
- Analog or Digital data acquisition from industrial units & machines such as Compressors, Pumps, Motors, Boom Barriers, Gates etc.
- Data Logging.

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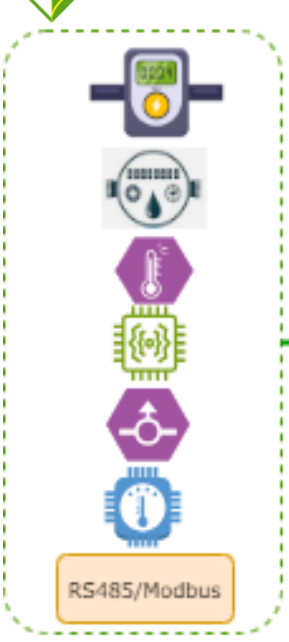
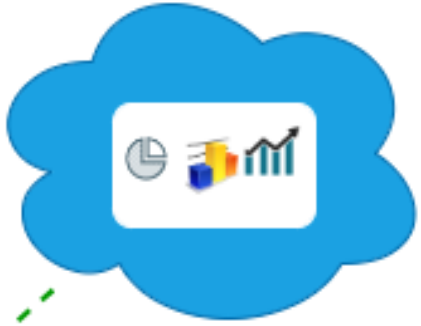
# Application Architecture

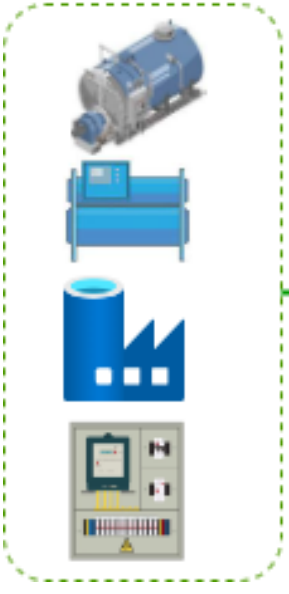



Any type of Sensor or Meter giving Analog, Digital, or RS485/Modbus Data

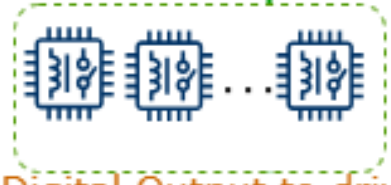

GSM(4G) or Wi-Fi



Any Display or Cloud

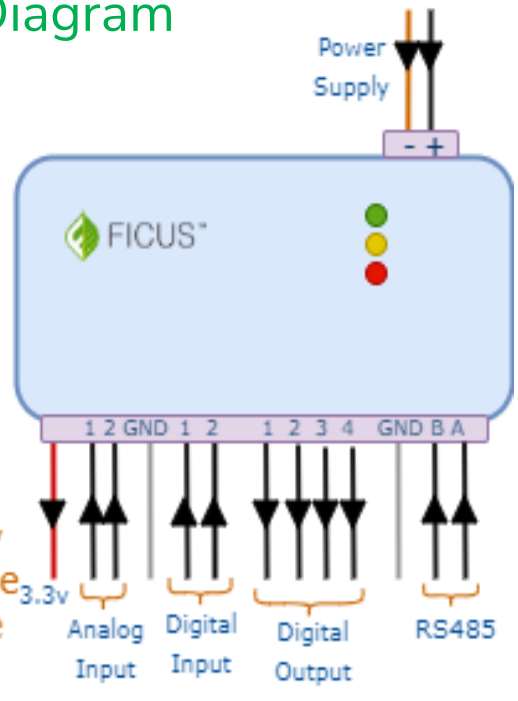


Any Type of Machine Giving Analog, Digital, or RS485/Modbus Data



Digital Output to drive external relays

## Wiring Diagram




Note: Only for representation purpose.

Placement of connectors and number IOs may vary on different models. Please check data sheet for more details.

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# Specifications

## IOs

- Modbus over RS485

- Analog Input: 2
  - Current (4 mA - 20 mA)
  - Resistive
  - Voltage
- Digital Input: 2
  - Potential Free
- Digital Output: 4
  - Common Positive

## Local Storage

- Onboard SD card (8/16GB)
- Data logging on SD card

## Power

- Available in two form factors
  - AC Input: 230VAC
  - DC Input: 24VDC
- Support for battery backup (Optional)

## Display

- Type: OLED (Optional)

## Configuration

- Configuration Support: Device hosted configuration web page
  (more details in next pages)

## Communication

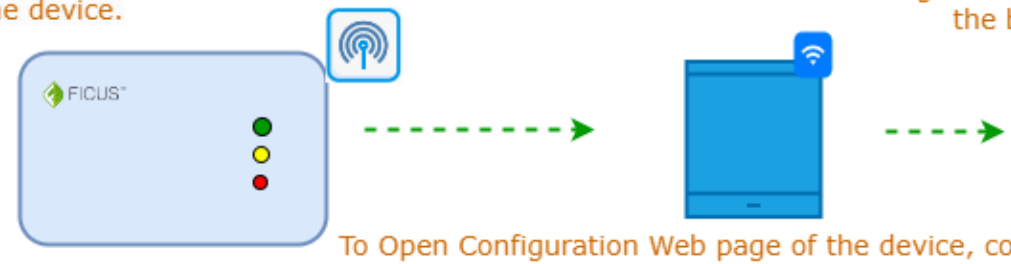
- Cloud Communication
  - Wi-Fi
  - GSM – Supports all types of 4G SIM
- Ethernet Support(Optional)
- Supports Bluetooth
- Open Interface to connect LoRa modules
- Supports MQTT and HTTP(S) protocol

## Other Specifications

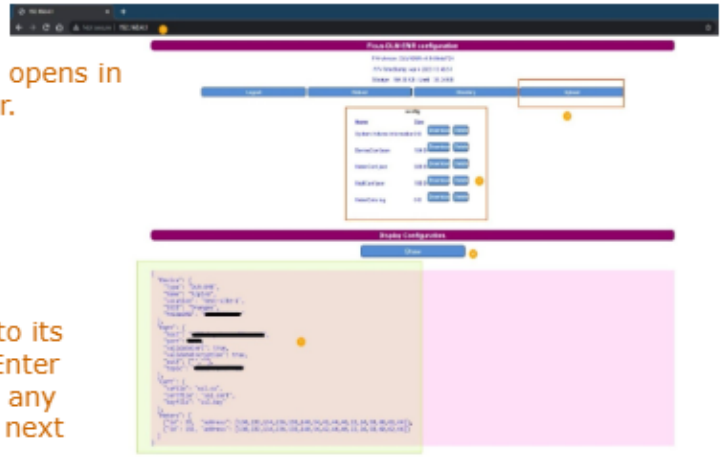
- RTC Support
- Server time/NTP time synchronization
- Configurable Time zone
- LED Indications: 3
- Operating Temp: From -10°$C$ to 70°$C$
- Humidity: 0% - 90% non-condensing
- Mounting: Wall mounting with Screw
- IP Protection: Two form factors,
  - IP 66
  - IP 20
- Enclosure: Polycarbonate Transparent Cover and ABS Opaque Base
- Color: Light Grey (RAL 7035)

# Configuration Web Page

Configuration file and the log files can be accessed via Configuration Webpage hosted on the device.




Configuration Page opens in the browser.



To Open Configuration Web page of the device, connect to its WiFi Hotspot from a mobile, laptop or any other device. Enter credentials to connect to the Wi-Fi. Open 192.168.4.1 on any browser. The configuration web page opens shown in the next image.

**Download Data/Log File from Configuration Webpage**

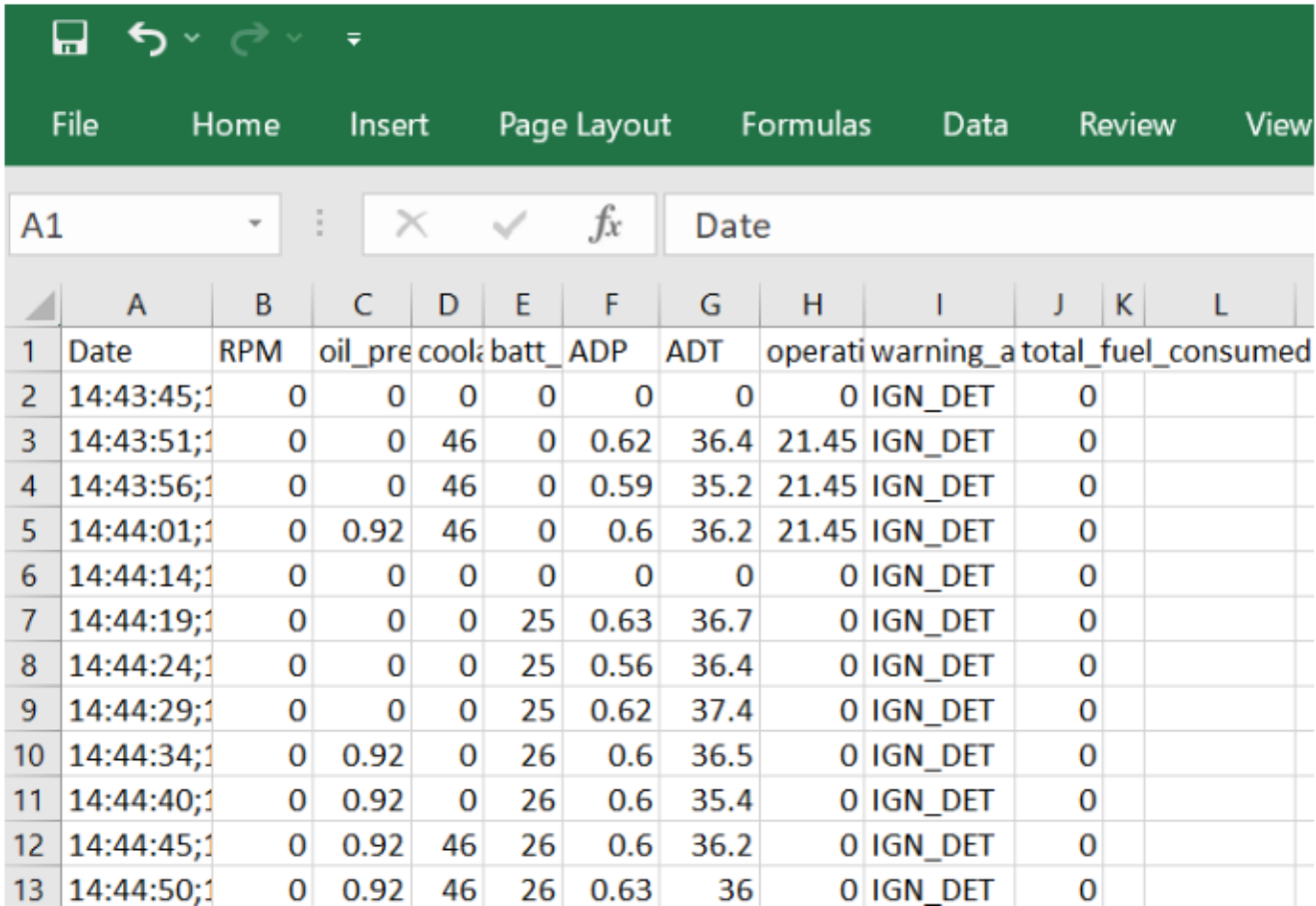
Configuration File can be used for:

1. To configure device parameters such as set/trigger points, Mapping tables, program variables etc.

2. Download Data/Log files.

**Configuration File Template**

```
DeviceType = "ELECTONICS CONTROLLER";
DeviceName ="REGULATION CONTROLLER";
DeviceLocation ="TRAIL 1";
Machine_model ="DM 500 W";
Machine_serial_number ="307890313";
CRANK_TIME_SEC =5;
LOGGING_FREQUENCY_SEC =30;
LCD_CONTRAST=3;
LOW_PRE_HIGH_PRE_EN=1;
FULL_SCALE_A0 =7;
FULL_SCALE_A1 =40;
FULL_SCALE_A2 =7;
FULL_SCALE_A3 =7;
FULL_SCALE_A4 =7;
FULL_SCALE_A5 =7;
FULL_SCALE_A6 =150;
FULL_SCALE_A7 =7;
ALARM_DURATION_SEC = 30;
RPM_CHANGE_FACTOR =0.25;
MAX_ADP =20.0;
MAX_ARP=2.50;
ADP_BLEED_RANGE =1.0;
UPPER_RPM_LIMIT = 1900;
LOWER_RPM_LIMIT = 1250;
ENGINE_SHUTDOWN_LIMIT =1000;
AVERAGE_SAMPLE_SIZE = 600;
ARP_TABLE_ROW_SIZE =19;
ADP_TABLE_ROW_SIZE = 21;
```



File Home Insert Page Layout Formulas Data Review View

A1 | Date

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Date | RPM | oil_pre | coola | batt_ | ADP | ADT | operati | warning_a | total_fuel_consumed | | |
| 2 | 14:43:45;1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | IGN_DET | 0 | | |
| 3 | 14:43:51;1 | 0 | 0 | 46 | 0 | 0.62 | 36.4 | 21.45 | IGN_DET | 0 | | |
| 4 | 14:43:56;1 | 0 | 0 | 46 | 0 | 0.59 | 35.2 | 21.45 | IGN_DET | 0 | | |
| 5 | 14:44:01;1 | 0 | 0.92 | 46 | 0 | 0.6 | 36.2 | 21.45 | IGN_DET | 0 | | |
| 6 | 14:44:14;1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | IGN_DET | 0 | | |
| 7 | 14:44:19;1 | 0 | 0 | 0 | 25 | 0.63 | 36.7 | 0 | IGN_DET | 0 | | |
| 8 | 14:44:24;1 | 0 | 0 | 0 | 25 | 0.56 | 36.4 | 0 | IGN_DET | 0 | | |
| 9 | 14:44:29;1 | 0 | 0 | 0 | 25 | 0.62 | 37.4 | 0 | IGN_DET | 0 | | |
| 10 | 14:44:34;1 | 0 | 0.92 | 0 | 26 | 0.6 | 36.5 | 0 | IGN_DET | 0 | | |
| 11 | 14:44:40;1 | 0 | 0.92 | 0 | 26 | 0.6 | 35.4 | 0 | IGN_DET | 0 | | |
| 12 | 14:44:45;1 | 0 | 0.92 | 46 | 26 | 0.6 | 36.2 | 0 | IGN_DET | 0 | | |
| 13 | 14:44:50;1 | 0 | 0.92 | 46 | 26 | 0.63 | 36 | 0 | IGN_DET | 0 | | |