



# CLOUD PLC® 4.0

INDUSTRIAL IO - AUTOMATION SIMPLIFIED

IEC/EN 61000-4-2  
IEC/EN 61000-4-4  
IEC/EN 61000-4-5  
IEC/EN 61000-4-8



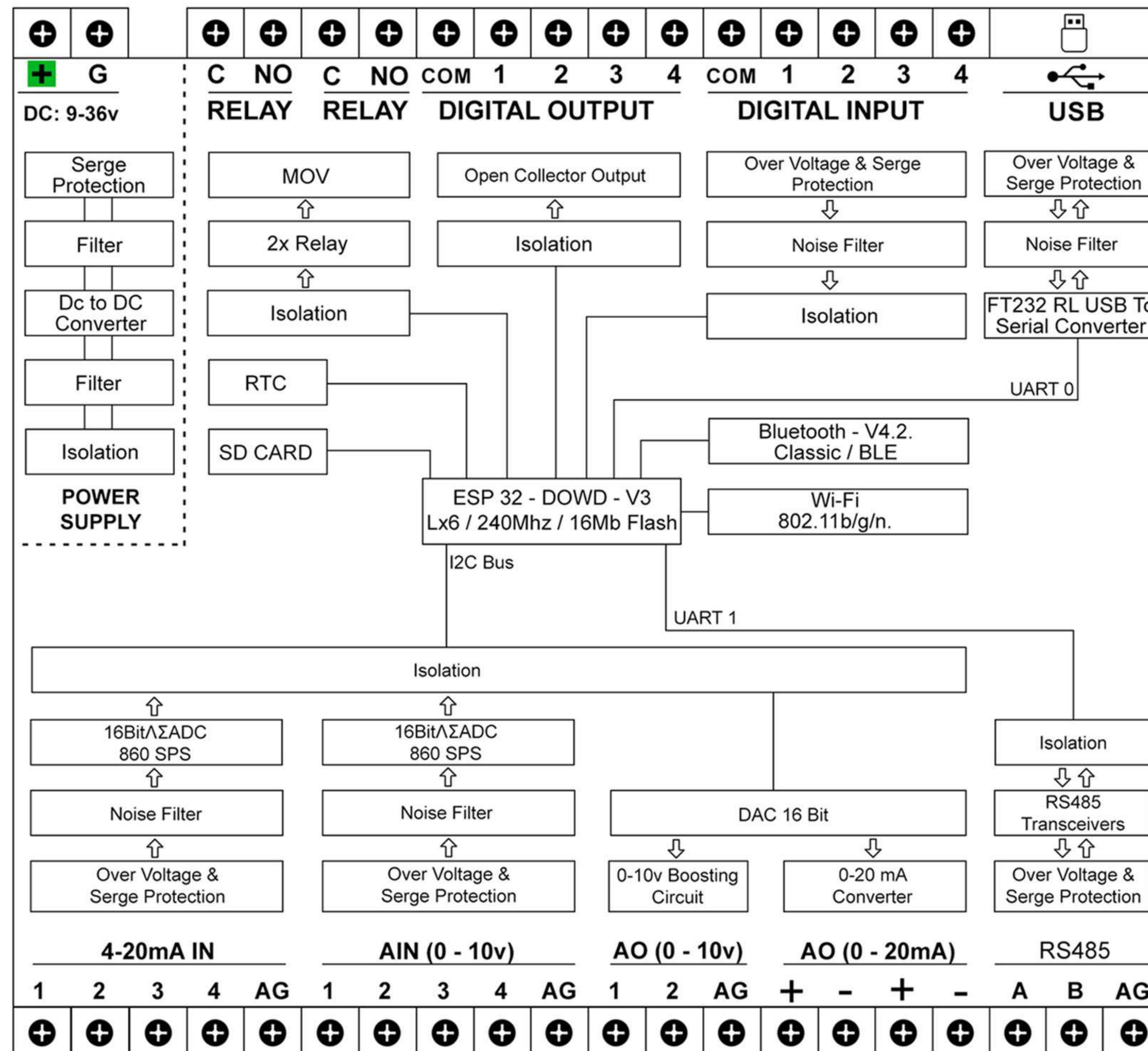




The Programmable Cloud PLC<sup>®</sup> offers Unmatched adaptability, reliable connectivity and customisable solution for your industry. Cloud PLC<sup>®</sup> can be utilized as an edge gateway, Automation tool, data logger & edge processing node. Cloud PLC supporting wide range of industrial protocols like Modbus, MQTT, JSON, RESTful, TCP/UDP, SNMP, OPC which makes the solution integration easier than ever for IT / Automation engineers.

### FEATURES

- 8x Isolated Analog Input Channel 0-10V, 0-24v, 4-20mA. 16 Bit Resolution and 860SPS.
- 2x Analog Output(AO) 0-10v.
- 2x 0-20mA transmitter.
- 4x Isolated Digital Input 24v.
- 4x Isolated Digital Output / PWM 24v.
- 2x Relay (NO & C).
- 1x Isolated RS485 for MODBUS RTU Communication.
- 1x Isolated RS232 communication port.
- 1x USB-Device Interface for Configuring, Monitoring & Download.
- 1x WiFi / Bluetooth / BLE Wireless Communication.
- Industrial Grade Design - Isolated & Protected IO & EMC / EMI Compliance.
- Protocol JSON / MQTT, RESTful, TCP/UDP, SNMP & OPC.
- Support secure communication SSL.
- 16 GB inbuilt storage\*.
- Support most of the cloud platforms including Microsoft Azure & AWS etc.
- Real Time Clock - RTC DS3231, Accuracy: : +/- 3.5ppm From -40 to +85 Degree C
- Power Supply - DC 9-36V.



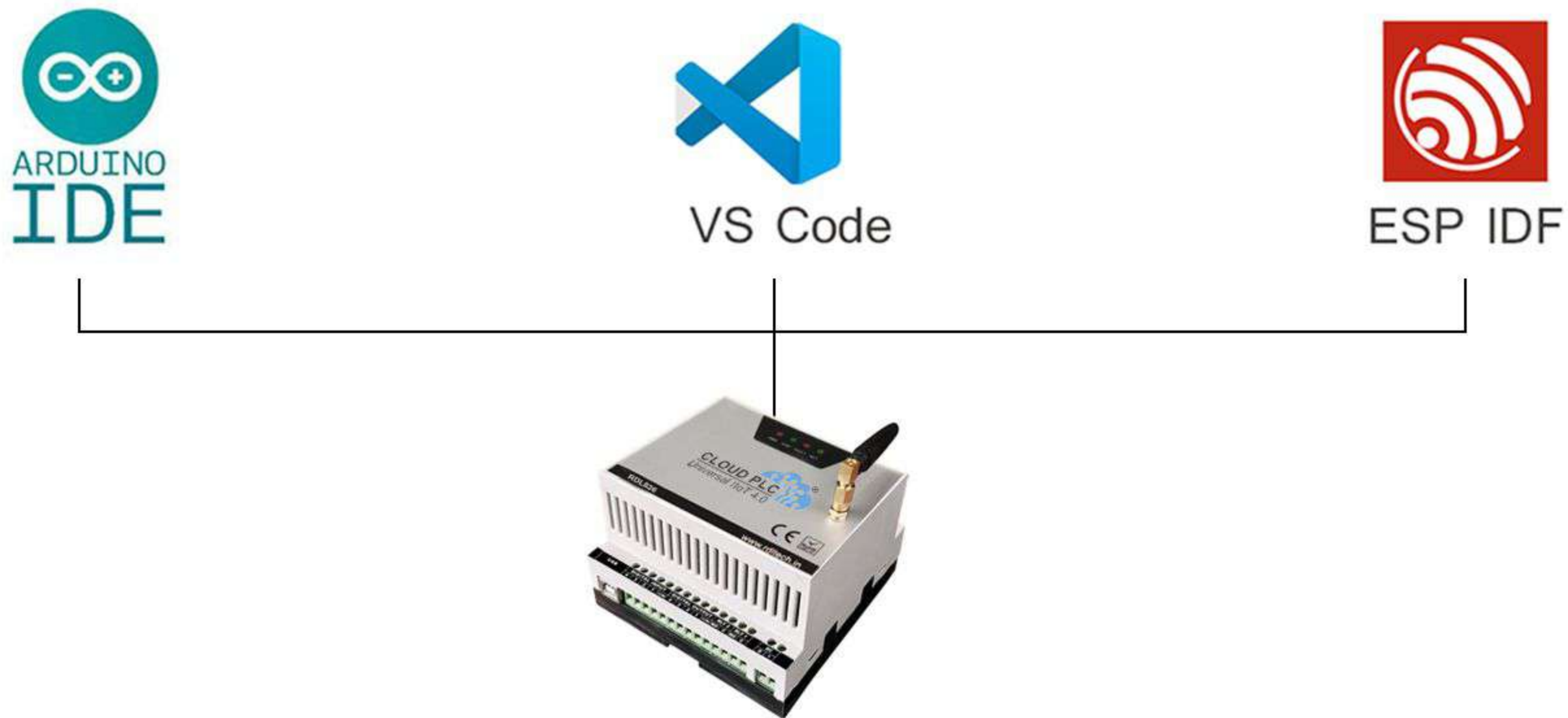




### BENEFITS

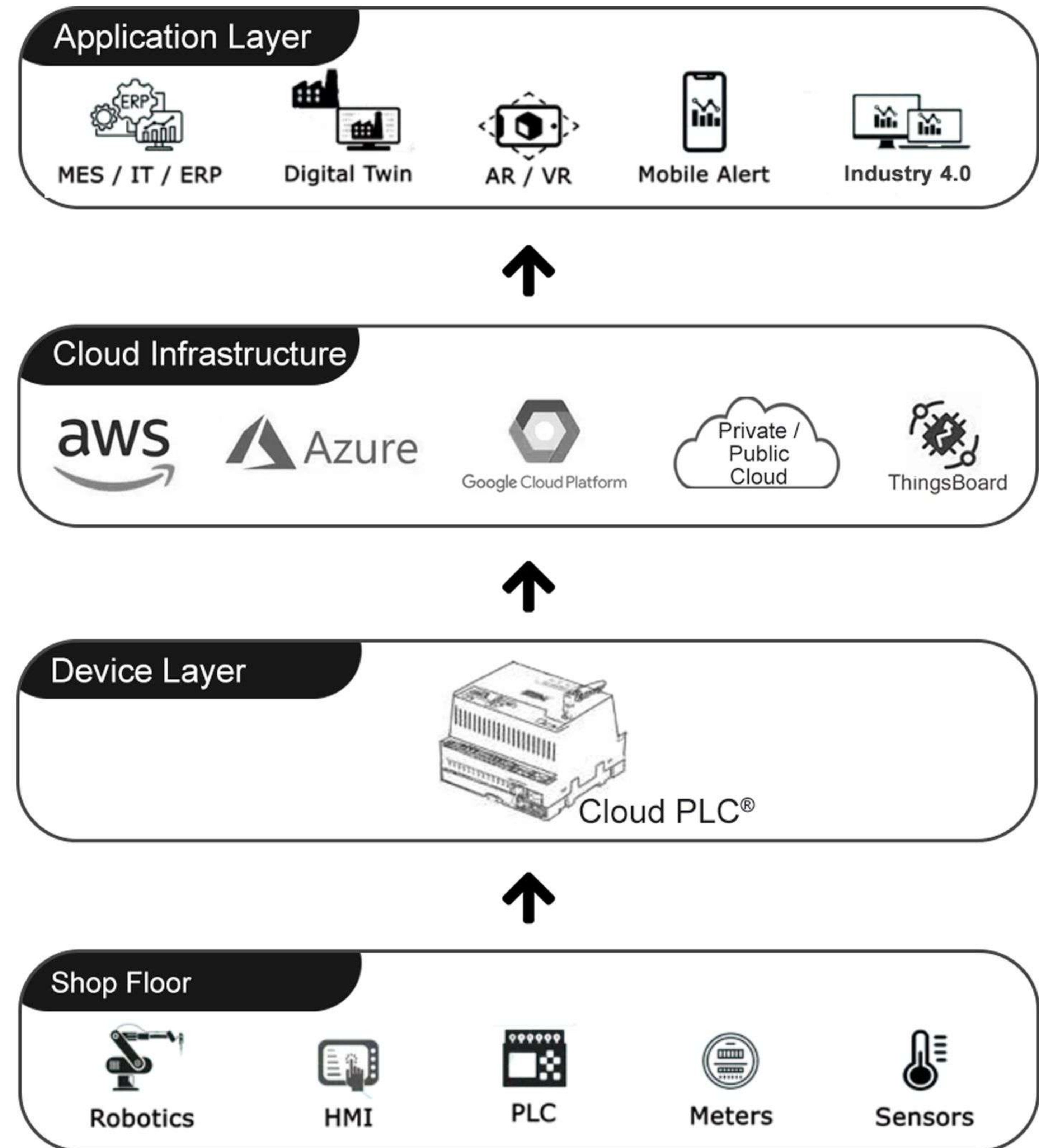
Cloud PLC® 4.0 can be used to build the custom industrial solution for monitoring and controlling PLC and SCADA, HMI, VFD, Motors, servo, Valves, energy meter, actuators, relays, encoder, RFID and fingerprint readers and industrial sensors.

#### Open Source Development Environment



### APPLICATION

- Production and process monitoring.
- Utilities monitoring.
- Condition monitoring.
- Environment monitoring.
- Industrial Smart grid.
- Leakage detection.
- Generator monitoring.
- Cold storage monitoring.
- Warning message in case of calamities.
- Standard SCADA Applications.
- District Metering.
- Water Treatment.
- Green House.







### SPECIFICATION

#### Isolated Digital Inputs

• Number of Digital Inputs	: 4
• Type of Digital Input	: Isolated with Interrupted, WET / DRY connection supported
• Max Input Voltage Range	: 0-24V
• Logic HIGH Trigger Voltage	: >12V
• Logic LOW Trigger Voltage	: <10V
• Maximum Trigger Frequency	: 5Khz
• Protection of Digital Outputs	: ESD, Transient

#### Isolated Digital Outputs

• Number of Digital Outputs	: 4
• Type of Digital Output	: Isolated /PWM
• Output Voltage Range	: Open collector output 24V
• Maximum Current per Output	: 100 mA
• Maximum Switching Frequency	: 5Khz
• Protection of Digital Outputs	: ESD, Transient

#### Isolated Analog input 0-24V

• Number of Analog Inputs	: 4
• Type of Analog Inputs	: Isolated 3700 Vrms
• Range of voltage measurement	: 0-24V
• Resolution	: 16 bit
• Protection of Analog Inputs	: ESD, Transient

#### Isolated Input 4-20mA

• Number of 4-20mA Inputs	: 4
• Type of 4-20mA Inputs	: Isolated 3700 Vrms
• Range of current measurement	: 4-20mA
• Resolution	: 16 bit
• Protection of Analog inputs	: ESD, Transient

#### Isolated Analog Output 0-10V

• Number of Analog Outputs	: 2
• Type of Analog Outputs	: Isolated 3700 Vrms
• Range of Voltage measurement	: 0-10V
• Resolution	: 16 bit
• Protection of Analog Inputs	: ESD, Transient

#### Isolated Analog Output 4-20mA

• Number of 4-20mA Ouputs	: 2
• Type of 4-20mA Ouputs	: Isolated 3700 Vrms
• Range of current measurement	: 4-20mA
• Resolution	: 16 bit
• Protection of Analog inputs	: ESD, Transient





### Processor

• Lx6 Microprocessor	: 32 Bit
• Clock Frequency	: 240 Mhz
• ESP32-XX Family	: 32 Bit

### Wireless Communication

• Wi-Fi	: 802.11 b/g/n/e/l (802.11n @ up to 150 Mbit/s).
• Bluetooth	: V4.2 Bluetooth low Energy (BLE).
• Protocol	: TCP / IP, JSON , MQTT , SSL , FTP, RESTful.
• Security	: WFA,WPA/WPA2 and WAPI.

### Wired Communication

#### Isolated RS485

• Isolation	: 2500 Vrms
• Duplex type / Protocol	: Half Duplex / MODBUS RTU
• Number of receivers on bus	: 32
• Data rate	: 115 Kbps
• Connector type	: Screw Connector A, B, GND

#### USB

• Chipset	: FTDI
• Baud rate	: 115kbps
• Connector Type	: USB B

#### Memory FRAM

• Memory	: 448Kb
• On Chip SRAM	: 520Kb
• RTC SRAM	: 8Kb
• EEPROM	: 4Kb
• Write Cycle	: 1 Trillion

### Relay

• No of Relay	: 2 x
• Power Rating	: 7A 250V AC, 12A 120V DC

### Memory SD Card

• Memory	: 8 to 32 GB
• DATA Storing Format	: CSV

### RTC - CR1220

• Battery Backup	: 3.3V
• Accuracy	: +/- 3.5ppm From -40 to +85 degree C

### Supply Voltage

• Supply Input Voltage	: 12V / 24V
• Permissible range, Lower limit (DC)	: 9V
• Permissible range, Upper limit (DC)	: 36V

### Installation

• Mounting	: Wall / DIN Rail
• Enclosure	: IP20

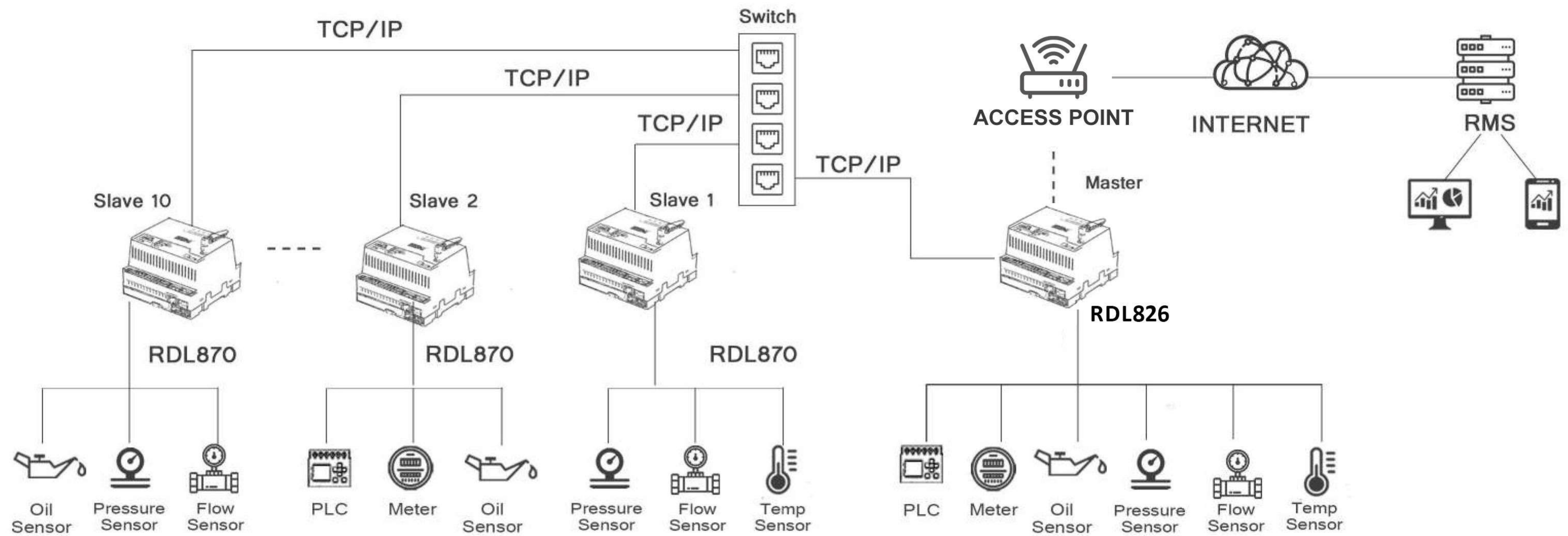
### Dimensions

• Length	: 110mm
• Height	: 72.5mm
• Width	: 110mm
• Weight	: 150g





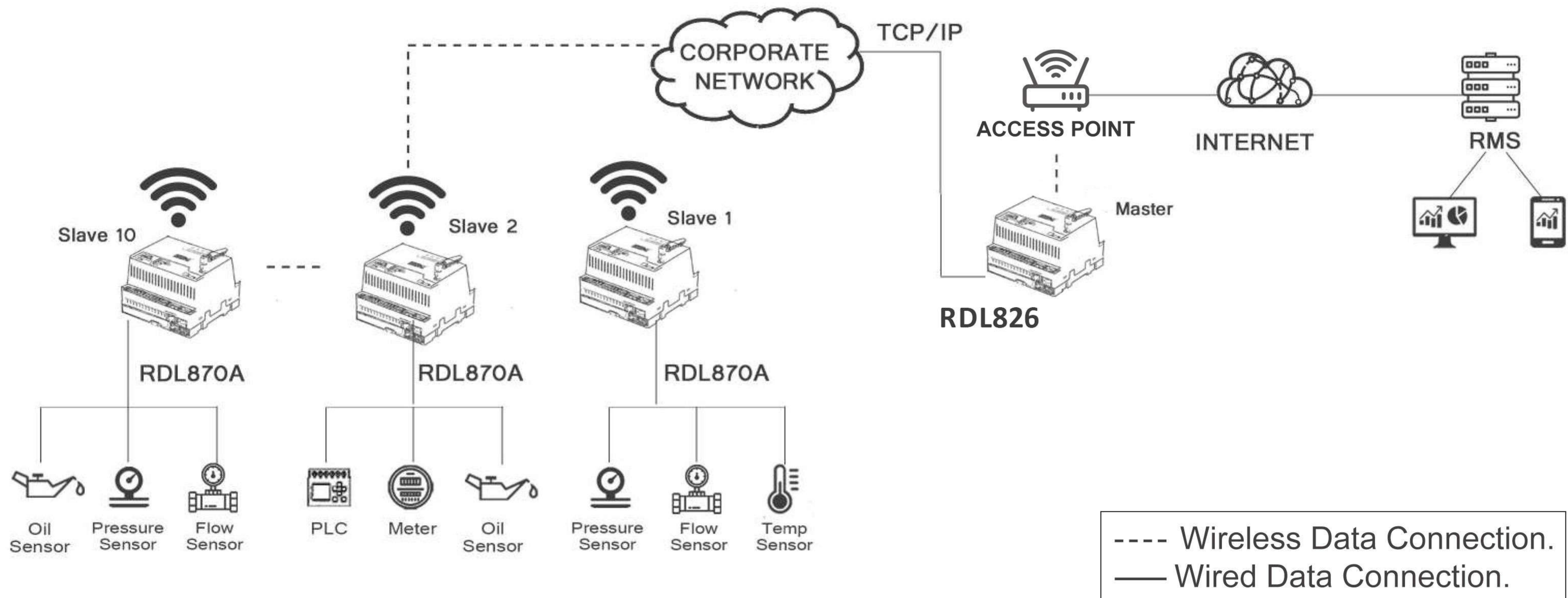
### APPLICATION DIAGRAM - REMOTE MONITORING SOLUTION







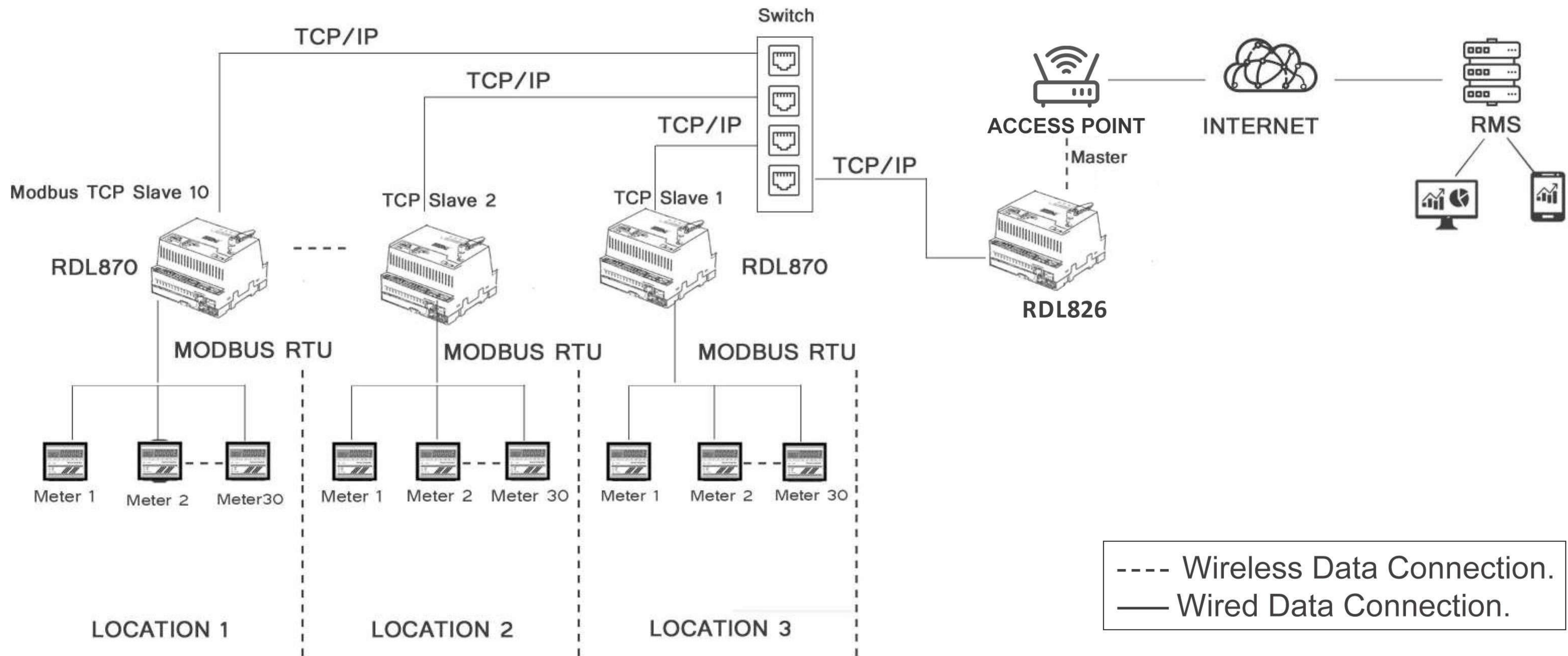
### APPLICATION DIAGRAM - CASCADING WiFi IO MODULE







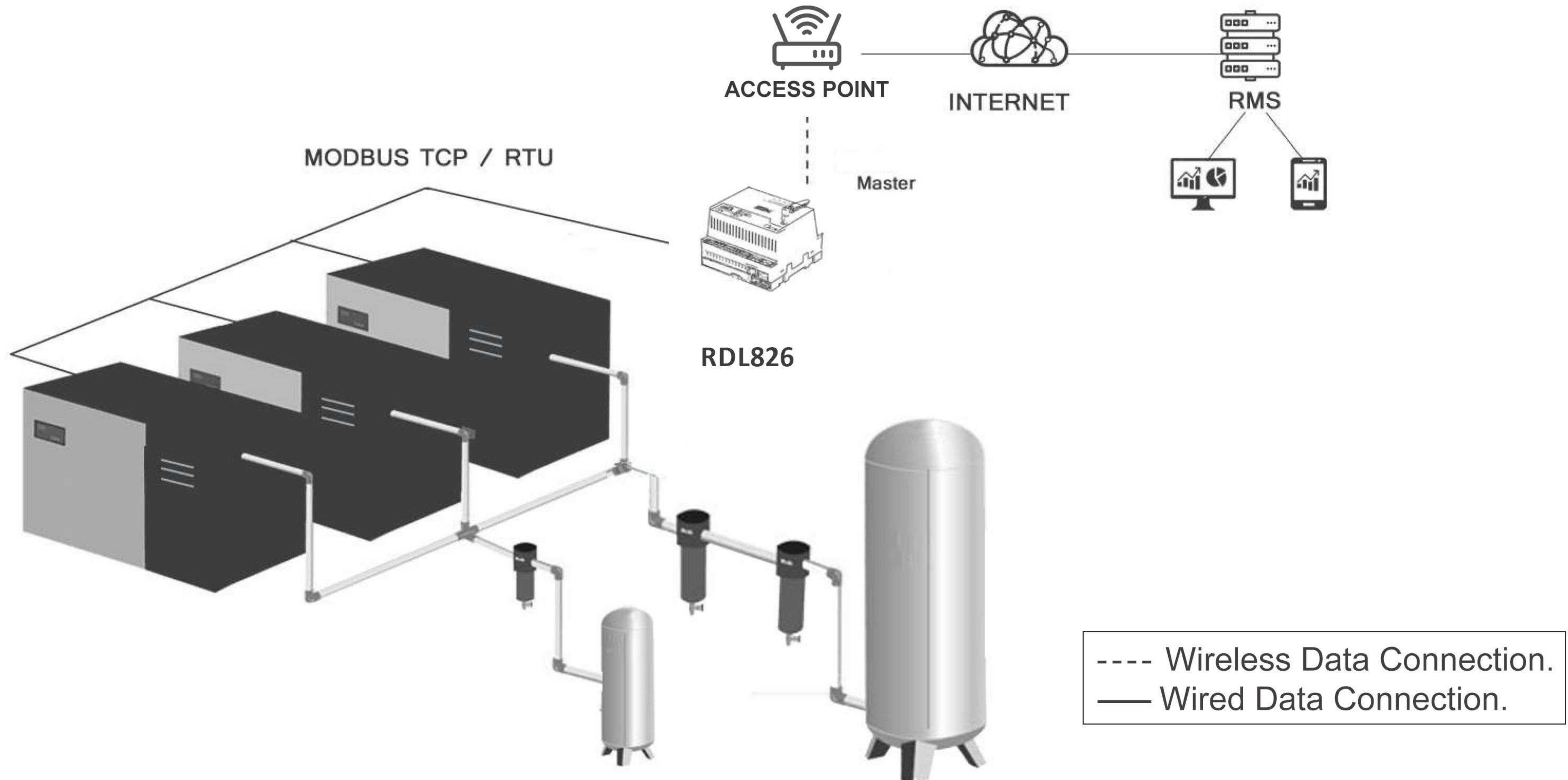
### APPLICATION DIAGRAM - ENERGY MONITORING SYSTEM







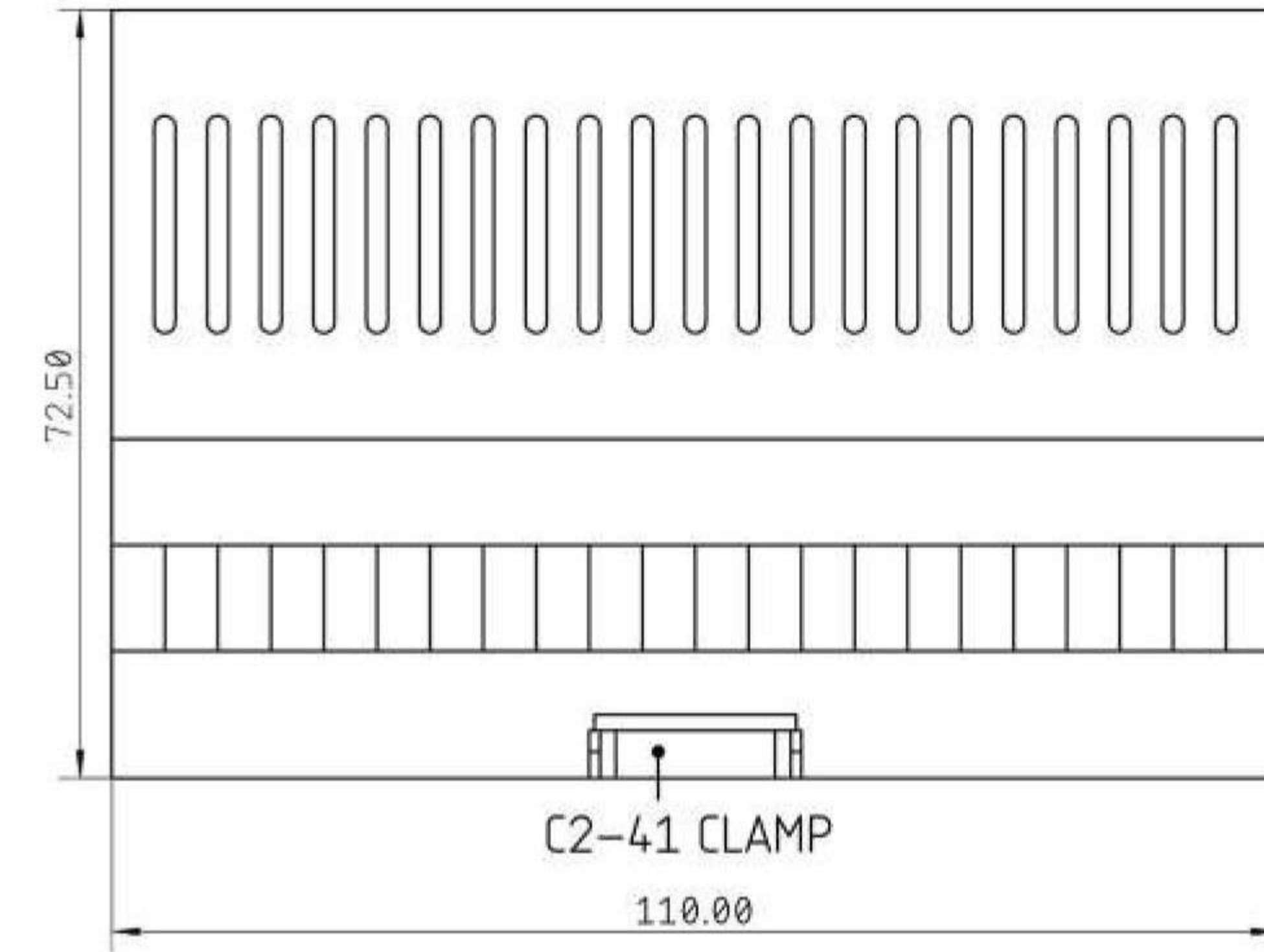
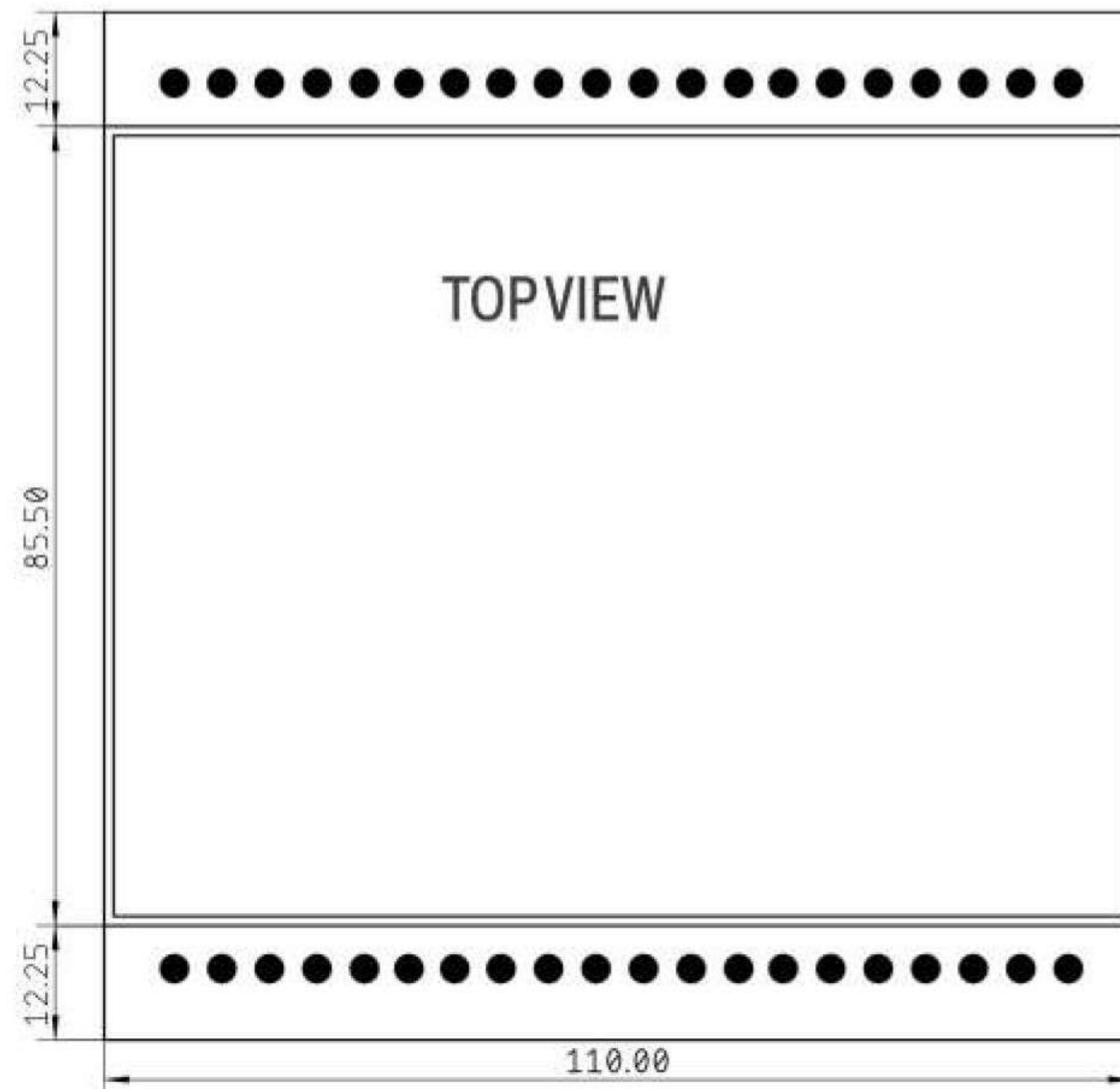
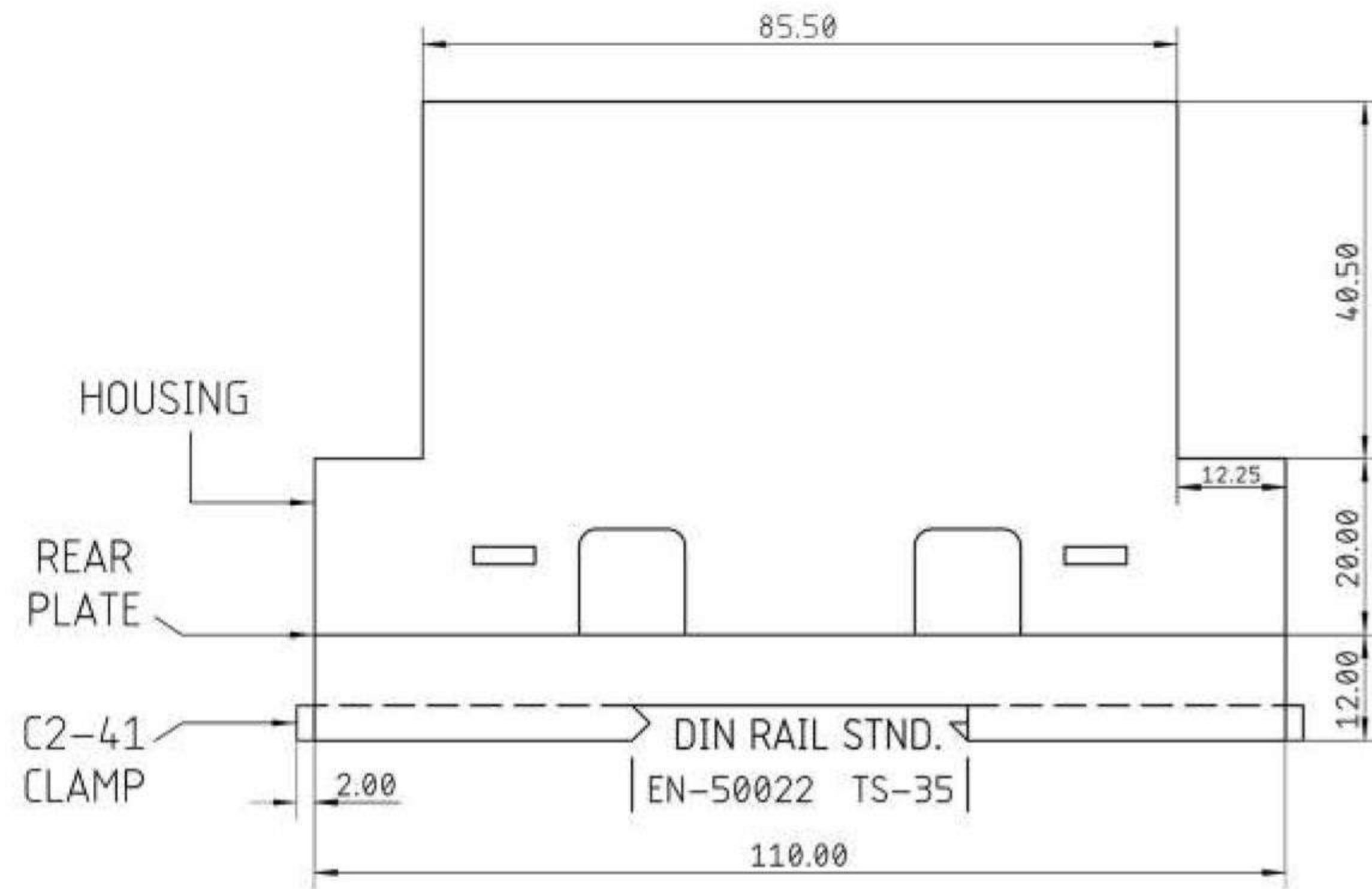
### DIAGRAM - COMPRESSOR MONITORING SYSTEM







### ENCLOSURE



**Note:**

Unit: Screw Terminal - XY129

Wire Range: 26 -12AWG / 0.5-2.5mm<sup>2</sup>

Tightening Torque: 0.5 N.m

Wall Mounting: C2-41 Clamp

Mounting Rail: TS35





### RELATED PRODUCTS

#### CLOUD PLC® - ETHERNET

ORDER CODE: RDL892



##### FEATURES

- 12x Isolated Analog Input Channel 0-10V, 0-24v, 4-20mA.16 Bit Resolution and 860SPS.
- 4x Isolated Digital Input 24V.
- 3x Isolated Digital Output / PWM 24V.
- 1x Relay (NO & C).
- 1x Isolated RS485 for MODBUS RTU Communication.
- 1x Isolated Ethernet 10 / 100Mbps MODBUS TCP Communication.
- 1x USB-Device Interface for Configuring, Monitoring and Download.
- 1x WiFi & Bluetooth Wireless Communication.
- 16 GB SD Card Storage\*.
- **Controller / Processor**  
Xtensa® 32-Bit LX7 Dual Core, 32 Bit, Upto 240MHz,
- 16 MB Flash Memory.

#### CLOUD PLC® - LORA

ORDER CODE: RDL893



##### FEATURES

- 12x Isolated Analog Input Channel 0-10V, 0-24v, 4-20mA.16 Bit Resolution and 860SPS.
- 4x Isolated Digital Input 24V.
- 3x Isolated Digital Output / PWM 24V.
- 1x Relay (NO & C).
- 1x Isolated RS485 for MODBUS RTU Communication.
- 1x LORA Communication.
- 1x USB-Device Interface for Configuring, Monitoring and Download.
- 1x WiFi & Bluetooth Wireless Communication.
- 16 GB SD Card Storage\*.
- **Controller / Processor**  
Xtensa® 32-Bit LX7 Dual Core, 32 Bit, Upto 240MHz
- 16 MB Flash Memory.





### RELATED PRODUCTS

#### CLOUD PLC® - 4G / LTE

ORDER CODE: RDL894



#### FEATURES

- 12x Isolated Analog Input Channel 0-10V, 0-24v, 4-20mA.16 Bit Resolution and 860SPS.
- 4x Isolated Digital Input 24V.
- 3x Isolated Digital Output / PWM 24V.
- 1x Relay (NO & C).
- 1x Isolated RS485 for MODBUS RTU Communication.
- 1x USB-Device Interface for Configuring, Monitoring and Download.
- 1x 4G / LTE Communication (Max 150Mbps Down Link / Max 50 Mbps Uplink).
- 16 GB SD Card Storage\*.

#### Controller / Processor

- Qualcomm MDM9207, ARM® Cortex® A7 1.3 Ghz.

#### CLOUD PLC® - RPI

ORDER CODE: RDL895



#### FEATURES

- 12x Isolated Analog Input Channel 0-10V, 0-24v, 4-20mA.16 Bit Resolution and 860SPS.
- 4x Isolated Digital Input 24V.
- 3x Isolated Digital Output / PWM 24V.
- 1x Relay (NO & C).
- 1x Isolated RS485 for MODBUS RTU Communication.
- 1x Isolated Ethernet 10 / 100Mbps MODBUS TCP Communication.
- 1x USB-Device Interface for Configuring, Monitoring and Download.
- 1x WiFi & Bluetooth Wireless Communication.
- 16 GB SD Card Storage\*.

#### Controller / Processor

- Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.8GHz.
- 16 MB Flash Memory.





### ADDITIONAL ACCESSORIES

#### IP65/66 ENCLOSURE



#### SPECIFICATIONS

Dimension (LxWxH)	280mm x 190mm x 130mm
Flammability Rating	: UL 94 HB
Impact Resistance (EN 62262)	: IK07
Temperature	c -5 to 60c
Electrical Insulation	: Totally Insulated.
NEMA Class	; NEMA 1, 4, 4X, 12, 13
Mounting	: Wall Mount / DIN Rail

#### ORDER CODE:

RDL871	: Enclosure with sufficient space for fixing to 110mmx72.5mmx110mm.
RDL871A	: Enclosure with 14.8V 10000mAh battery Pack & sufficient space for mounting size 110mmx72.5mmx110mm.
RDL871B	: Enclosure with 80-240VAC 2 Amps & sufficient space for mounting size 110mmx72.5mmx110mm.

#### POWER SUPPLY 2.5 AMPS 24V

Order Code: RDL873



#### SPECIFICATIONS

Output Voltage	24 Volt
Amps	2 Amps
Input Voltage(AC/DC)	85-264VAC
Mounting	DIN rail

#### EXTERNAL 4G/LTE ANTENNA

Order Code: RDL333



#### SPECIFICATIONS

Frequency (MHz)	2400 2500 MHz
Gain	3 dBi
Impedance ( )	50
VSWR	< 2.0

#### EXTERNAL WIFI ANTENNA

Order Code: RDL872



#### SPECIFICATIONS

Connector	IPX female to SMA-KY
Frequency(Hz)	2.4 GHz
Gain(dB)	<3
VSWR	<1.5

Note: Additional Accesories need to be Order Separately. For More Additional Accessories Please Contact us Directly.





### APPLICATION STARTER KITS

#### Cloud PLC® IoT Starter Kit

##### ENERGY MONITORING KIT



#### PACKAGE INCLUDES

• Cloud PLC®	RDL826	1 Nos
• SMPS	24V 2 Amps	1 Nos
• Energy Meter	3 Phase, Modbus RS485	1 Nos
• CT Coil	50 AMps	3 Nos
• SDK	Open Source Web SDK	
• Protocol	JSON / MQTT	

**ORDER CODE: RDL826**

Note: Additional Accesories need to be Order Separately. For More Additional Accessories Please Contact us Directly.

#### Cloud PLC® IoT Starter Kit

##### FUEL, OIL LEVEL & TEMPERATURE MONITORING KIT



#### PACKAGE INCLUDES

• Cloud PLC®	RDL826	1 Nos
• SMPS	24V 2 Amps	1 Nos
• Fuel Level Sensor Module	Modbus RS485	1 Nos
• Oil Level Sensor	Modbus RS485	
• Temperature Sensor 4-20mA	50°C to 400°C	
• SDK	Open Source Web SDK	
• Protocol	JSON / MQTT	

**ORDER CODE: RDL826**





### ORDER INFORMATION TABLE

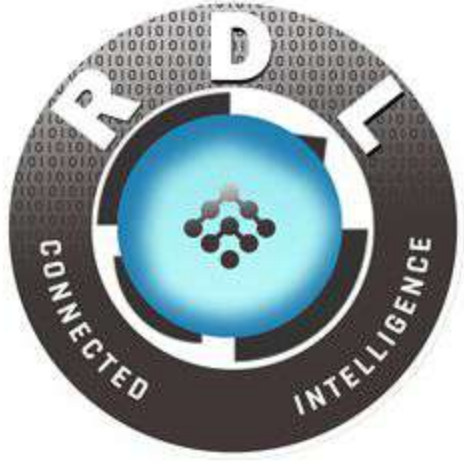
Model	RDL826A	RDL826B	RDL826C	RDL826D
8x Isolated Analog Input Channel 0-10V, 0-24v, 4-20mA	✓	✓	✓	✓
2x Analog Output(AO) 0-10v	✓	✓	X	X
2x 0-20mA transmitter	✓	✓	✓	✓
4x Isolated Digital Input 24v	✓	✓	✓	✓
4x Isolated Digital Output / PWM 24v.	✓	✓	✓	✓
2x Relay (NO & C)	✓	✓	✓	✓
1x Isolated RS485 (MODBUS RTU Communication)	✓	X	✓	X
1x Isolated RS232 communication port	X	✓	X	✓
1x USB-Device Interface	✓	✓	✓	✓
1x WiFi / Bluetooth / BLE Wireless Communication	✓	✓	✓	✓
16 GB SD Card Storage*	✓	✓	✓	✓

NOTE: ✓ - Available

- SD Card Not Included in the package

X - Not Available





### Note:

1. Unless otherwise specified, all parameters in this datasheet were measured at 25°C and 75% humidity.
2. All index testing procedures in this datasheet are based on our company's corporate standards.
3. We can offer product customization; please contact the sales team directly for more information.
4. We Ship Worldwide.
5. Specifications are subject to change without prior notice.
6. For additional information on Product and to buy online @ [www.researchdesignlab.com](http://www.researchdesignlab.com)

## RDL Technologies Pvt. Ltd.

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