



**RDL TECHNOLOGIES**

**RDL891 / DATASHEET**



# INDUSTRIAL DATA LOGGER

# 4G/LTE

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

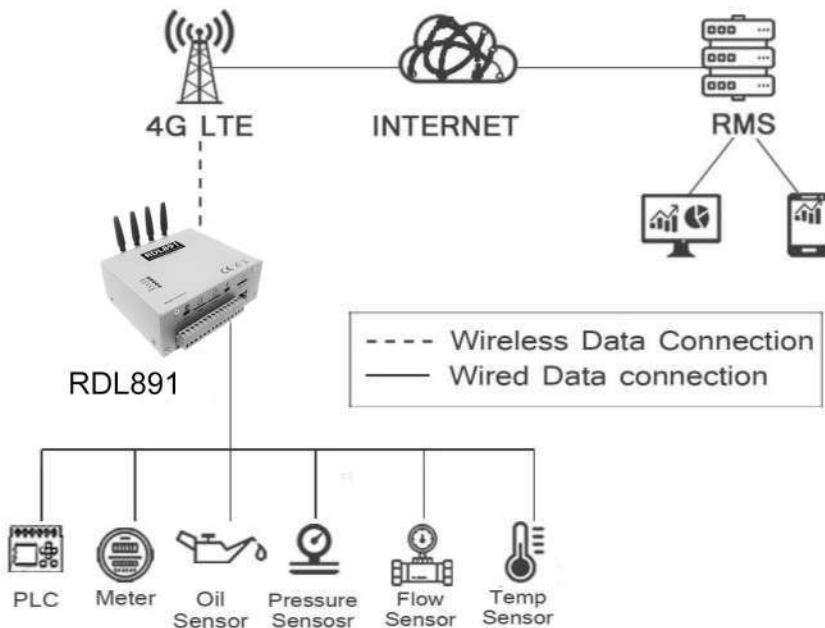




### INDUSTRIAL DATA LOGGER

Intelligent Data Logger product is designed to seamlessly integrate with the IoT and Analytical processing systems. Supporting Multiple IO Interfaces, Protocols, and Secure Data Logger communication are perfect for creating a custom Remote Monitoring Solution.

- ✓ Highly Reliable Connectivity.
- ✓ No Coding - Plug & Play.
- ✓ Industrial Isolated IO.
- ✓ Alarm & Automated Task.
- ✓ Easy Remote Management.
- ✓ Industrial Grade Design.
- ✓ Supporting Wide Range of Industrial Protocol.



### FEATURES

#### Powerful IoT Edge Capabilities Intelligent Data Logger

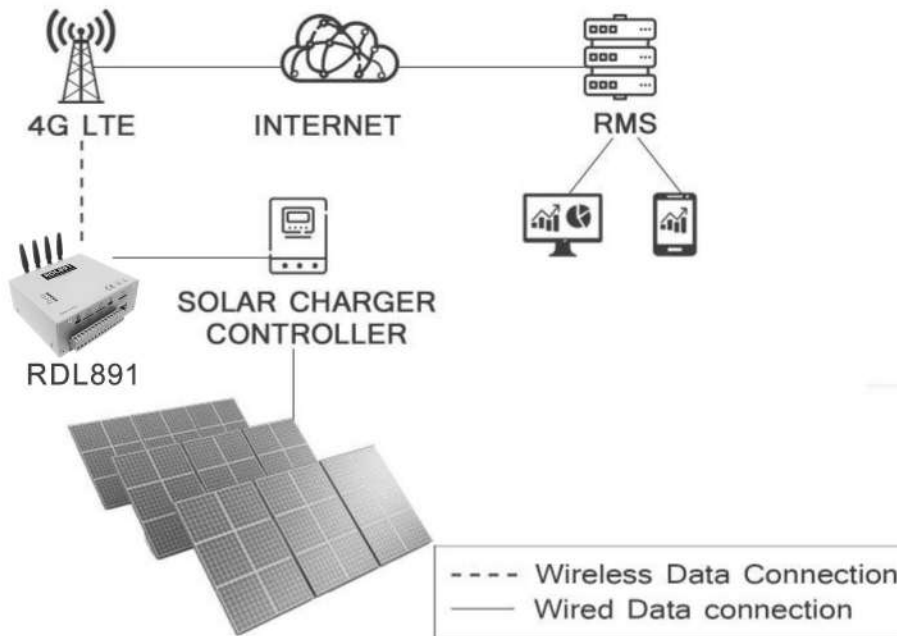
- 12x Isolated Analog Input Channel 0-10V, 0-24v, 4-20mA. 16 Bit Resolution and 860SPS.
- 4x Isolated Digital Input 24v.
- 3x Isolated Digital Output / PWM 24v.
- 2x Isolated RS485 (Master / Slave) for MODBUS RTU Communication.
- 1x Relay (NO & C).
- 1x Isolated Ethernet 10 / 100Mbps MODBUS TCP Communication.
- 1x USB-Device Interface for Configuring, Monitoring and Download.
- 1x Wi-Fi / 2G / 4G / LTE Wireless Communication.
- 1X Isolated RS232 communication port.
- Support for Dual SIM.
- External WAN port of Internet connectivity.
- GPS / GNSS\*.
- Configurable polling interval .
- Configure and Read Multiple Slave IDs, Selectable Input Register Holding Register & Coil.
- Configurable Data Type and Conversion Method (INT, Long INT, FLOAT, Double Float & RawHex) UINT (ABCD (Big-Endian), DCBA (Little-Endian), CDAB, BADC).
- Industrial Grade Design - Isolated & Protected IO & EMC / EMI Compliance.
- Configurable Scaling factor enabling option for Analog channel.
- Configurable WiFi / GPRS / 4G / LTE Interface.
- Configurable Data Transferring Protocol JSON / MQTT and FTP.
- Support secure communication SSL.
- Support most of the country telecommunications network.
- Offline Data Storage - Supported Upto 16 GB External SD Card.
- Data Logs and stores its CSV file during network failure.
- Logger Sends offline data once Network and Server Connected.
- Auto Maintain socket / server connection.
- No programming knowledge required - totally custom configurable though configuration manger software.
- Support most of the cloud platforms including Microsoft Azure & AWS etc.
- Power Supply - 9 - 36v.
- Support Wall Mount & Din Rail.



### INDUSTRIAL DATA LOGGER

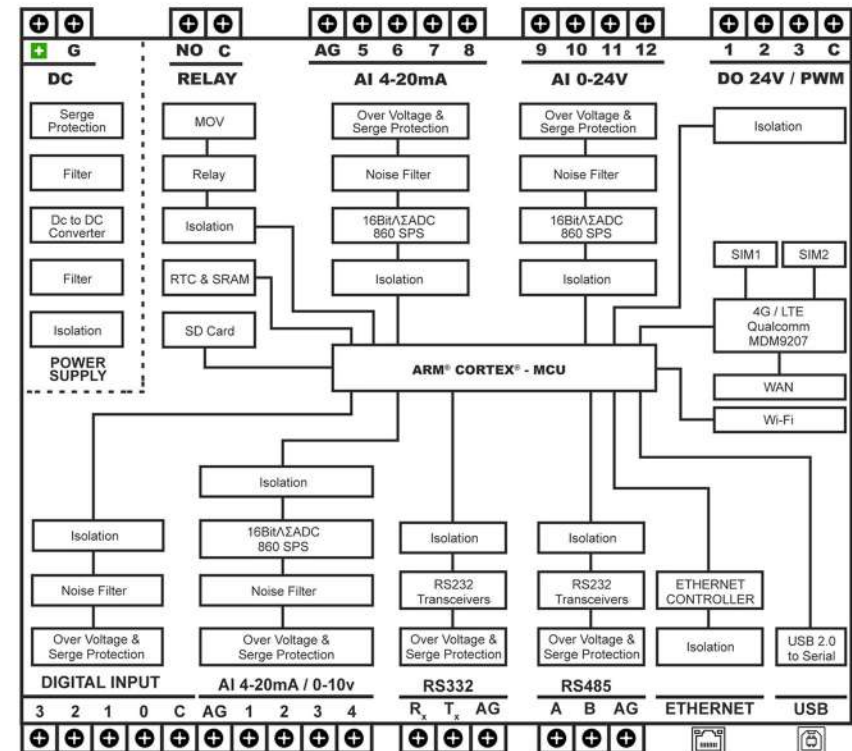
Industrial Data Logger 4.0 can be used to build the custom industrial solution for monitoring and controlling PLC and SCADA, HMI, VFD Motors, servo, Valves, energy meter, actuators, relays, encoder, rfid and finger print readers, industrial sensors and many more with below mentioned operational benefits.

- ✓ Improved productivity & asset utilization.
- ✓ Preventive maintenance.
- ✓ Reduced downtime.
- ✓ Paperless production environment.
- ✓ Performance Forecasting.
- ✓ Production count, rejections.



### APPLICATIONS

- Remote Monitoring System(RMS).
- Production and process monitoring.
- Utilities monitoring.
- Condition monitoring.
- Environment monitoring.
- Industrial Smart grid.
- Solar grid.
- Cold storage monitoring
- District metering.
- Water treatment.
- Generator monitoring.
- Green House.
- Warning message in case of calamities.
- Standard SCADA Applications





### SPECIFICATION

#### ISOLATED SWITCHABLE ANALOG INPUTS

Number of analog inputs	4
Type of analog inputs	Isolated 3700 Vrms
Range of voltage measurement	0-10v
Range of current measurement	0-20mA / 4-20mA
Switching of voltage current mode	Software controlled
Resolution/Sampling	16 bit/860 SPS
Protection of analog inputs	ESD, Transient

#### MODBUS TCP MASTER

Supported functions	01, 03, 04
Supported data formats	INT 8/16 Bit, Doble INT 32 Bit, 64 Bit Unsigned INT, Float (ABCD (big-endian), DCBA (little-endian), CDAB, BADC), HEX

#### OPERATING ENVIRONMENT

Operation temprature	20 °C + 70 °C
Working humidity	< 95% (+25 °C)

#### MEMORY SD CARD

Memory	16 GB
DATA Storing Format	CSV

#### WIRELESS COMMUNICATION

2G/4G/ LTE	UMTS/HSPA(+) and GSM / GPRS / EDGE / MIMO
<b>Data Speed</b>	
4G/LTE	Max 150Mbps Down link / Max 50 Mbps Uplink
Edge	Max 256kbps Down link / Max 236.8 kbps Uplink
GPRS	Max 107kbps Down link / Max 85.6 kbps Uplink
Protocol	TCP / IP, JSON, MQTT, SSL, FTP, RESTful
Security	WFA, WPA / WPA2 and WAPI

#### MODBUS RTU MASTER

Supported baud rates	From 4800 to 115200
Supported functions	01, 03, 04,
Supported data formats	INT 8/16 Bit, Doble INT 32 Bit, 64 Bit Unsigned INT, Float (ABCD (big-endian), DCBA (little-endian), CDAB, BADC), HEX
Number of data bits	7 or 8
Number of stop bits	1 or 2
Parity bits	None, Even, Odd



### ISOLATED RS232 COMMUNICATION

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### 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

#### Ethernet 10 / 100 Mbps

Isolation	1500 Vrms
Protocol	MODBUS TCP
Connector Type	RJ45

#### USB

Chipset	FTDI
Baud rate	115kbps
Connector Type	USB B

### SUPPLY VOLTAGE

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

### REAL TIME LOCATION (GPS)\*

GPS Type	Multi - Constellation GNS GPS Receiver
Antenna mode	Active
Antenna Type	External Antenna

### RTC

Battery Backup	3.3V
Accuracy	+/- 3.5ppm From -40 to +85 °C

### PROCESSOR

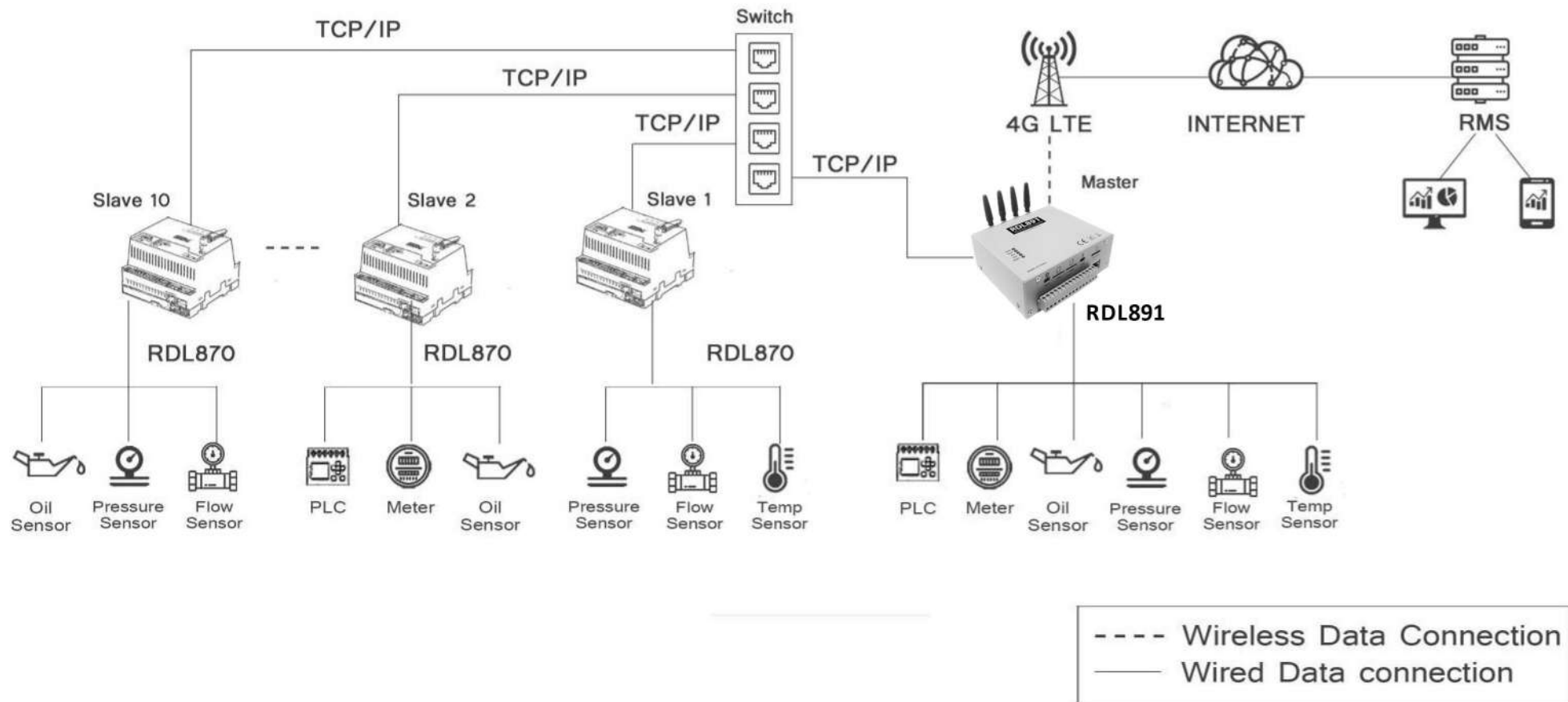
4G/LTE Chipset	Qualcomm MDM9207, ARM® Cortex® A7 1.3 Ghz.
IO controller Chipset	ARM® Cortex® 32 Bit 200Mhz.

### ELECTROMAGNETIC COMPATIBILITY

ESD	IEC/EN 61000-4-2	Contact 6KV Air +8KV	Criteria A
EFT	IEC/EN 61000-4-4	+ 2KV	Criteria A

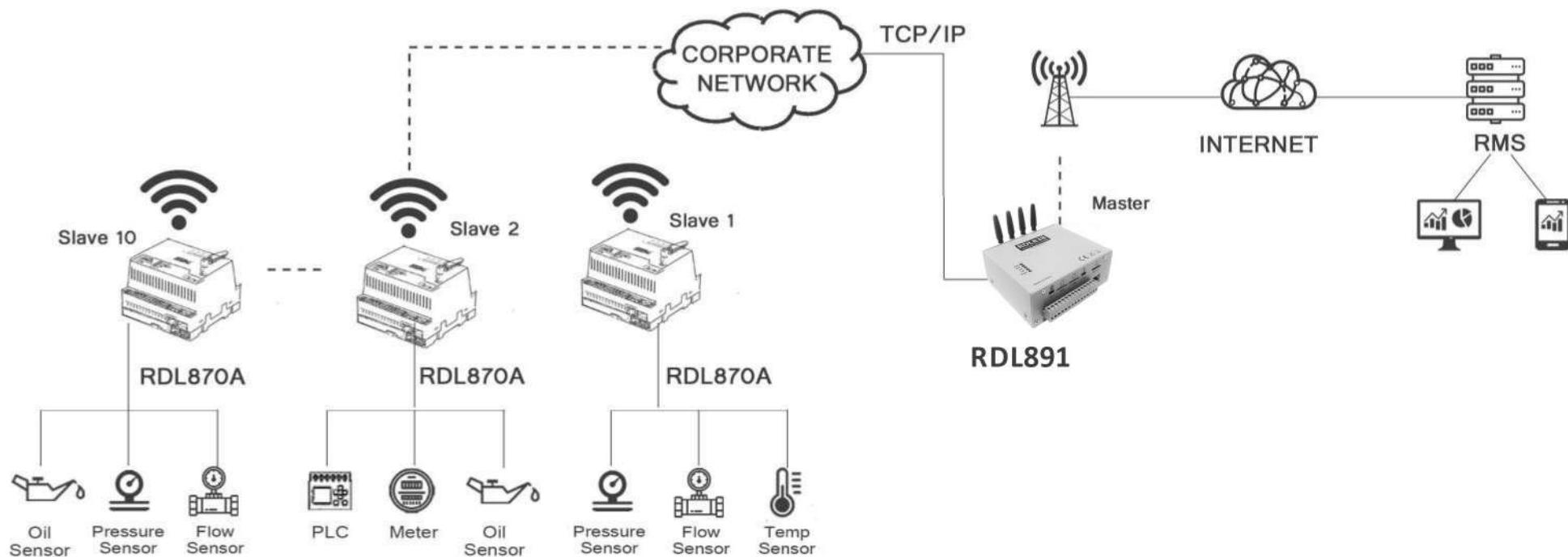
### PHYSICAL SPECIFICATION

Length x Height x Width (LxHxW)	110mm x 72.5mm x 110mm
Weight	150 g
Mounting	Wall / DIN Rail
Enclosure	IP20





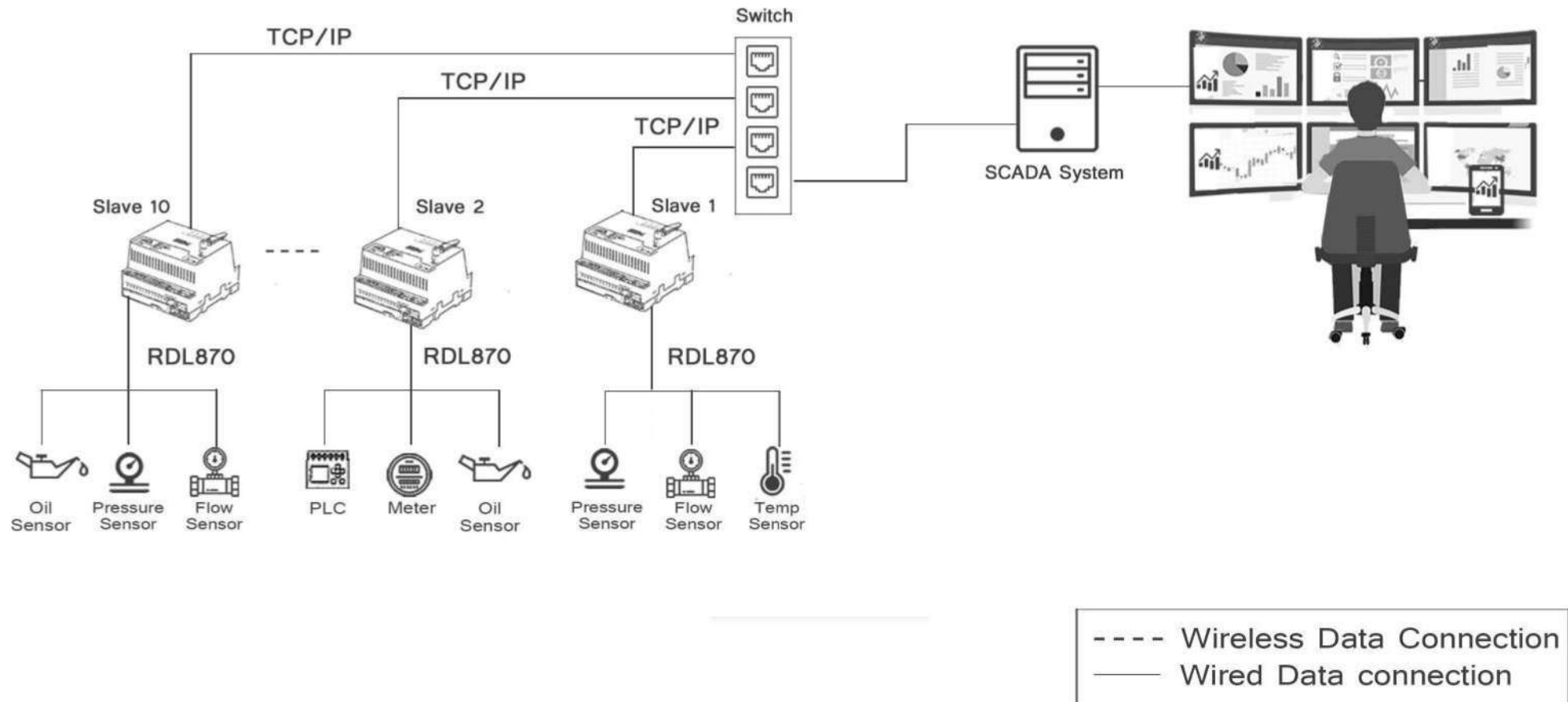
### APPLICATION DIAGRAM - CASCADING WiFi IO MODULE



----- Wireless Data Connection  
———— Wired Data connection



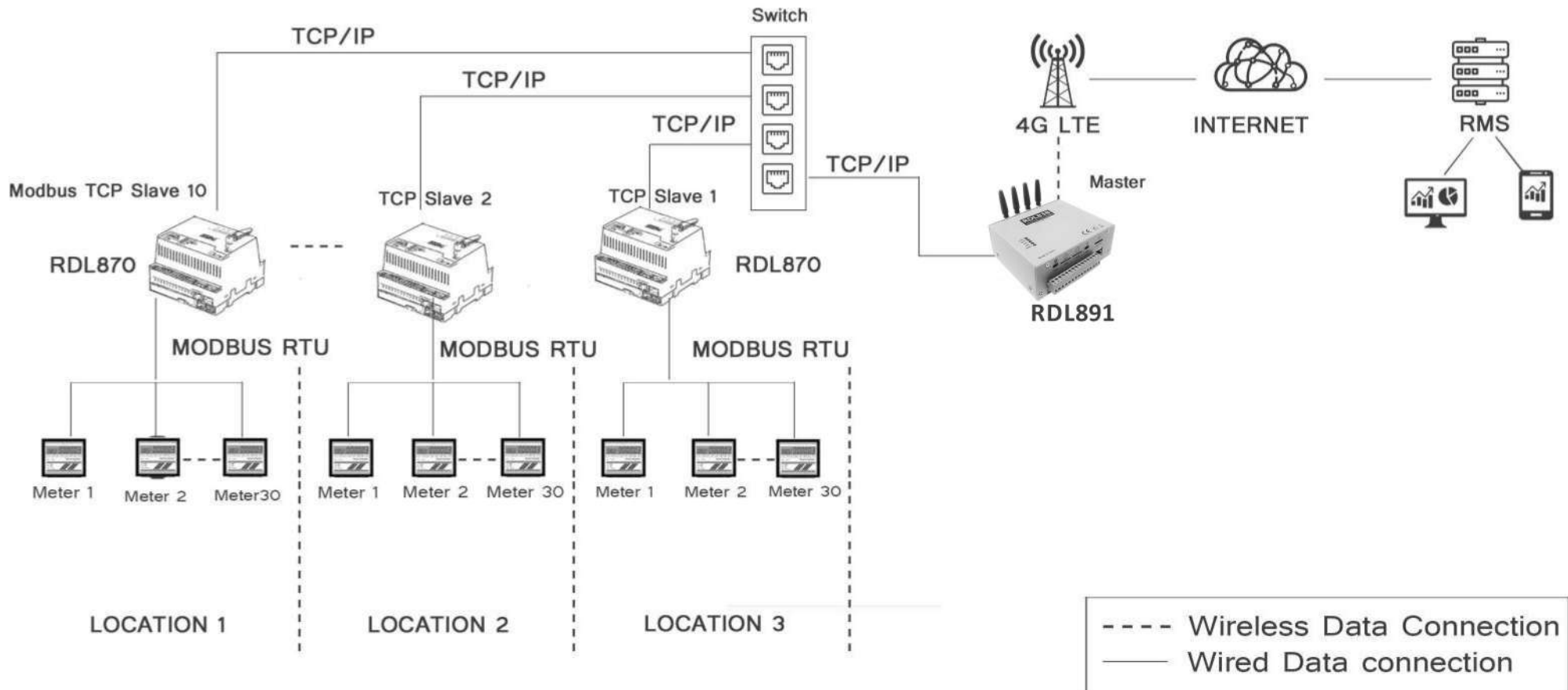
### APPLICATION DIAGRAM - SCADA REMOTE IO MONITORING





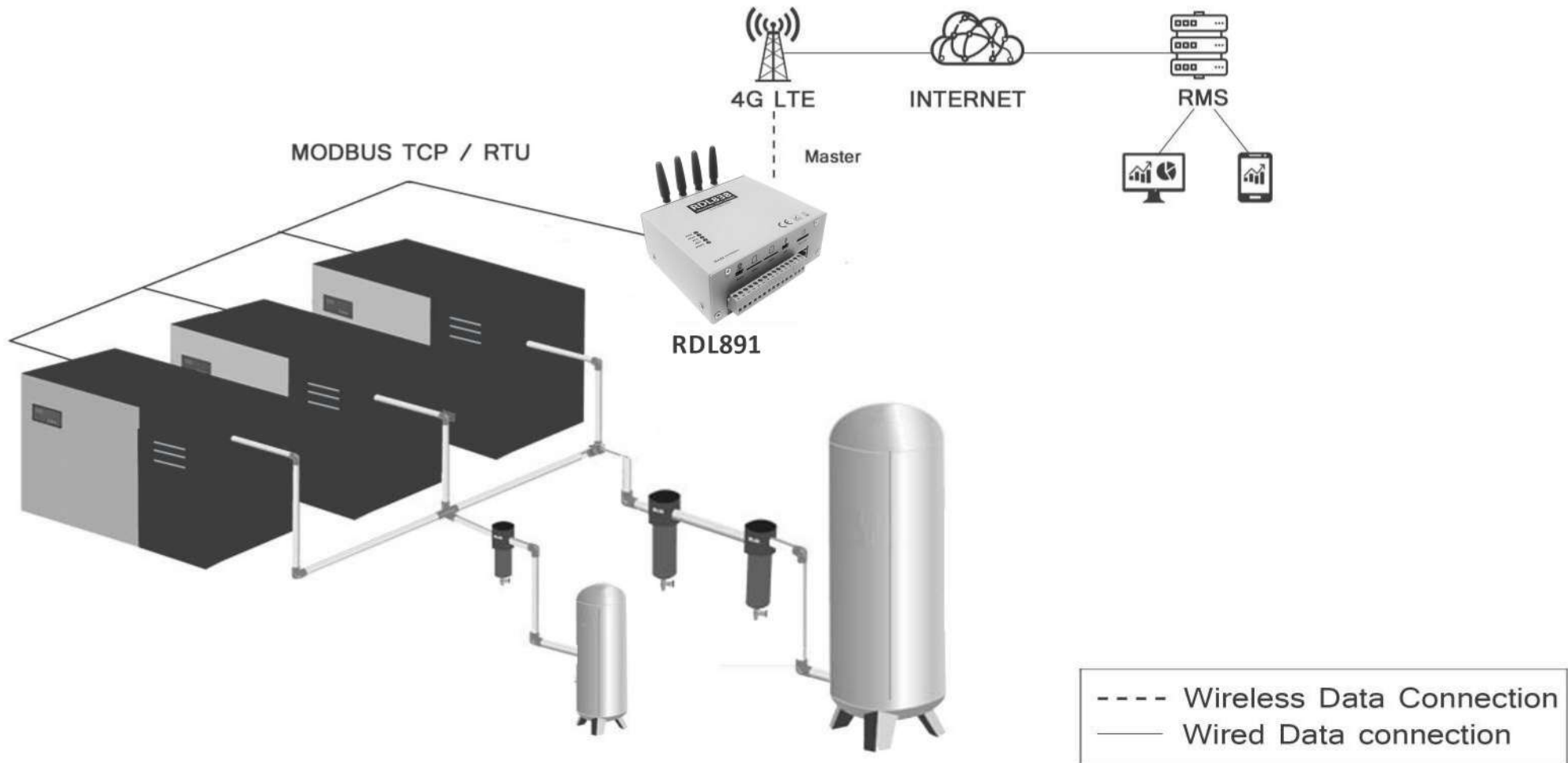


### APPLICATION DIAGRAM - ENERGY MONITORING SYSTEM



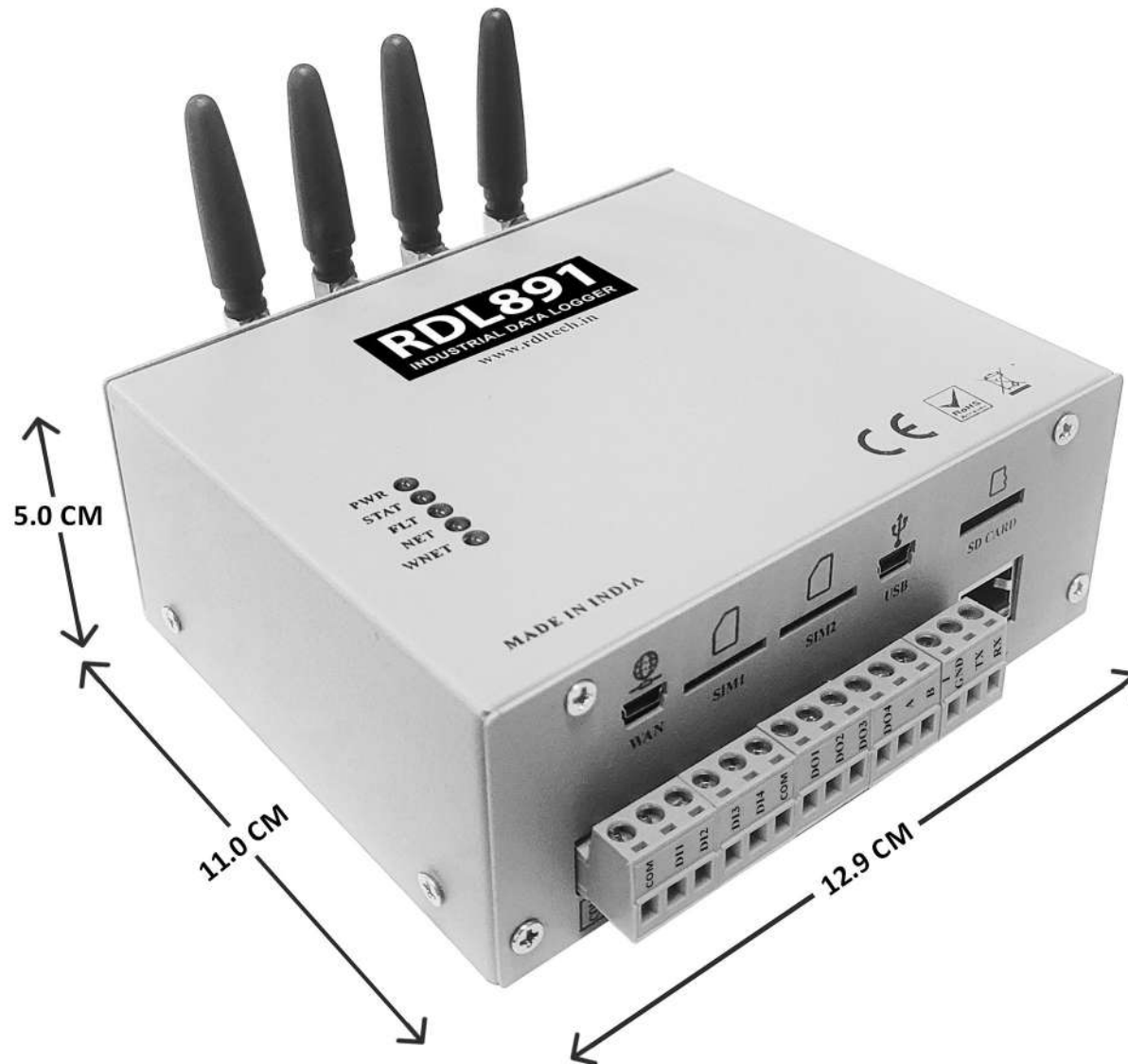


### DIAGRAM - COMPRESSOR MONITORING SYSTEM





### ENCLOSURE





### ADDITIONAL ACCESSORIES

#### IP65/66 ENCLOSURE



#### SPECIFICATIONS

Dimension (LxWxH)	280mmx190mmx130mm
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 Data Logger.
RDL871A	:	Enclosure with 14.8V 10000mAh Battery Pack & sufficient space for mounting Data Logger.
RDL871B	:	Enclosure with 80-240VAC 2 Amps & sufficient space for mounting Data Logger.

#### 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

#### IoT STARTER KIT - ENERGY MONITORING KIT



##### PACKAGE INCLUDES

Data Logger	RDL838	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:

WiFi - RDL874  
4G/LTE - RDL874A

#### IoT STARTER KIT - FUEL, OIL LEVEL & TEMPERATURE MONITORING KIT



##### PACKAGE INCLUDES

Data Logger	RDL838	1 Nos
SMPS	24V 2 Amps	1 Nos
Fuel Level Sensor Module	Modbus RS485	1 Nos
Oil Level Sensor	Modbus RS485	
Temperature Sensor 4-20 mA	50 °C to 400 °C	
SDK	Open Source Web SDK	
Protocol	JSON/MQTT	

##### ORDER CODE:

WiFi - RDL875  
4G/LTE - RDL875A

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



### ORDER INFORMATION TABLE

Model	RDL891A	RDL891B	RDL891C	RDL891D	RDL891E	RDL891F	RDL891G	RDL891H
4x Isolated Digital Inputs (DI)	✓	✓	✓	✓	✓	✓	✓	✓
4x Isolated Digital Output (DO)	✓	✓	✓	✓	✓	✓	✓	✓
Isolated 4-20mA Analog Input (AI)	8 CH	4 CH	4 CH	8 CH	8 CH	4 CH	4 CH	8 CH
Isolated 0-10V Analog Input (AI)	4 CH	8 CH	8 CH	4 CH	4 CH	8 CH	8 CH	4 CH
1x Relay 5Amps 250V	✓	✓	✓	✓	✓	✓	✓	✓
16GB SD Card Storage*	✓	✓	✓	✓	✓	✓	✓	✓
4G / LTE	✓	✓	✓	✓	X	X	X	X
Wi-Fi	✓	✓	✓	✓	X	X	X	X
1x Isolated RS485 RTU (Master)	✓	✓	✓	✓	✓	✓	✓	✓
1x Isolated RS485 RTU (Slave)	✓	X	✓	X	✓	X	✓	X
1x Isolated RS232	X	✓	X	✓	X	✓	X	✓
1x Ethernet Modbus TCP	✓	✓	X	✓	✓	X	✓	✓
1x Ethernet (LAN Based Upload)	X	X	X	X	✓	✓	✓	✓
USB	✓	✓	✓	✓	✓	✓	✓	✓
GNS / GPS*	✓	X	X	X	X	X	X	X

**NOTE:** ✓ - Available

- SD Card Not Included in the package

X - Not Available



**Our Shipping Partner**



**We Accept**



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)

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