RDL TECHNOLOGIES

BIOMETRIC AUTHENTICATION SYSTEM

PLC AND HMI

CE | RoHS 2011/65/EU

RDL TECHNOLOGIES

Biometric Authentication System is designed to enhance the security and access control of PLC (Programmable Logic Controller) and SCADA (Supervisory Control and Data Acquisition) systems. By integrating biometric authentication system, we provide a robust and reliable solution that ensures only authorized personnel can access critical industrial control systems.

The product is tested with all PLC'S and supports multiple interface options.

FEATURES

- Fingerprint scanning is the sole method used for biometric authentication. Integration with existing PLC and SCADA systems for seamless implementation.
- Secure storage and encryption of biometric data.
- User management and access control functionalities.
- Real-time monitoring and logging of access events.
- Centralized administration and reporting capabilities.
- Finger print enrollment : Max 150 Users.
- Memory : 16GB.
- Communication : RS485 MODBUS RTU, MODBUS TCP, RS232, USB.
- Power supply : DC 24V.

MODEL NO. : RDL810

MODEL NO. : RDL810D

MODEL NO. : RDL810E

BENEFITS

- Higher level of security and access control for critical industrial control systems
- Prevention of unauthorized access and potential threats to PLC and SCADA systems
- Reduction in the risk of data breaches and sabotage
- Compliance with industry regulations and standards
- Elimination of password-related security vulnerabilities
- Centralized administration for easy user management and reporting purposes

APPLICATIONS

Our Biometric Authentication System is suitable for a range of industries that rely on PLC and SCADA systems, including:

- Manufacturing facilities with automated production lines.
- Energy and utility organizations with power generation & distribution systems.
- Water treatment plants.
- Transportation and logistics companies with control and monitoring systems.
- Oil and gas refineries and petrochemical plants.
- 4M (Man, Machine, Material, Method) standard implementation.

TECHNICAL SPECIFICATION

WIRED COMMUNICATION

Isolated RS485	
• Isolation	: 2500Vrms
• 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
Isolated RS232	
• Isolation	: 2500Vrms
• Duplex type / Protocol	: Open Data
• Number of receivers on bus	: 32
• Data rate	: 115 Kbps
• Connector type	: DB9 Female
USB	
• Chipset	: FTDI
• Baud rate	: 115 Kbps
• Connector Type	: RJ45

Relay	
• No. of Relay	: 1 x
• Power Rating	: 5 Amps 250v

FINGERPRINT SCANNER

- Fingerprint image input me: <0.3 seconds.
- Window area: 14x18 mm.
- Matching method: Comparison method (1: 1).
- Search method (1: N).
- Characteristic file: 256 bytes.
- Template file: 512 bytes.
- Storage capacity: 150 pieces.
- Security Level: Five (from low to high: 1,2,3,4,5).
- Fake rate (FAR): <0.001%.
- Refusal rate (FRR): <1.0%.
- Search me: <1.0 seconds (1: 1000 hours, mean value).
- Host interface: UART \ USB1.1.
- Working environment: Temperature: -20 °C - +40 °C Relave humidity: 40% RH-85% RH (no condensaon).
- Storage environment: Temperature: -40 °C - +85 °C Relave humidity: <85% H (no condensaon).

MODBUS TCP MASTER / SLAVE

• Supported Function	: 03 Holding Register
• Supported Data Format	: 16 Bit

MODBUS RTU MASTER / SLAVE

• Supported baud rates	: From 4800 to 115200
• Supported Data Format	: 16 Bit
• Number of data bits	: 8 Bit
• Number of stop bits	: 1
• Parity bits	: None, Even, Odd

OPERATING ENVIRONMENT

• Operation temperature	: 20 °C ~ + 70 °C
• Working humidity	: < 95% (+ 25 °C)

MEMORY SD CARD

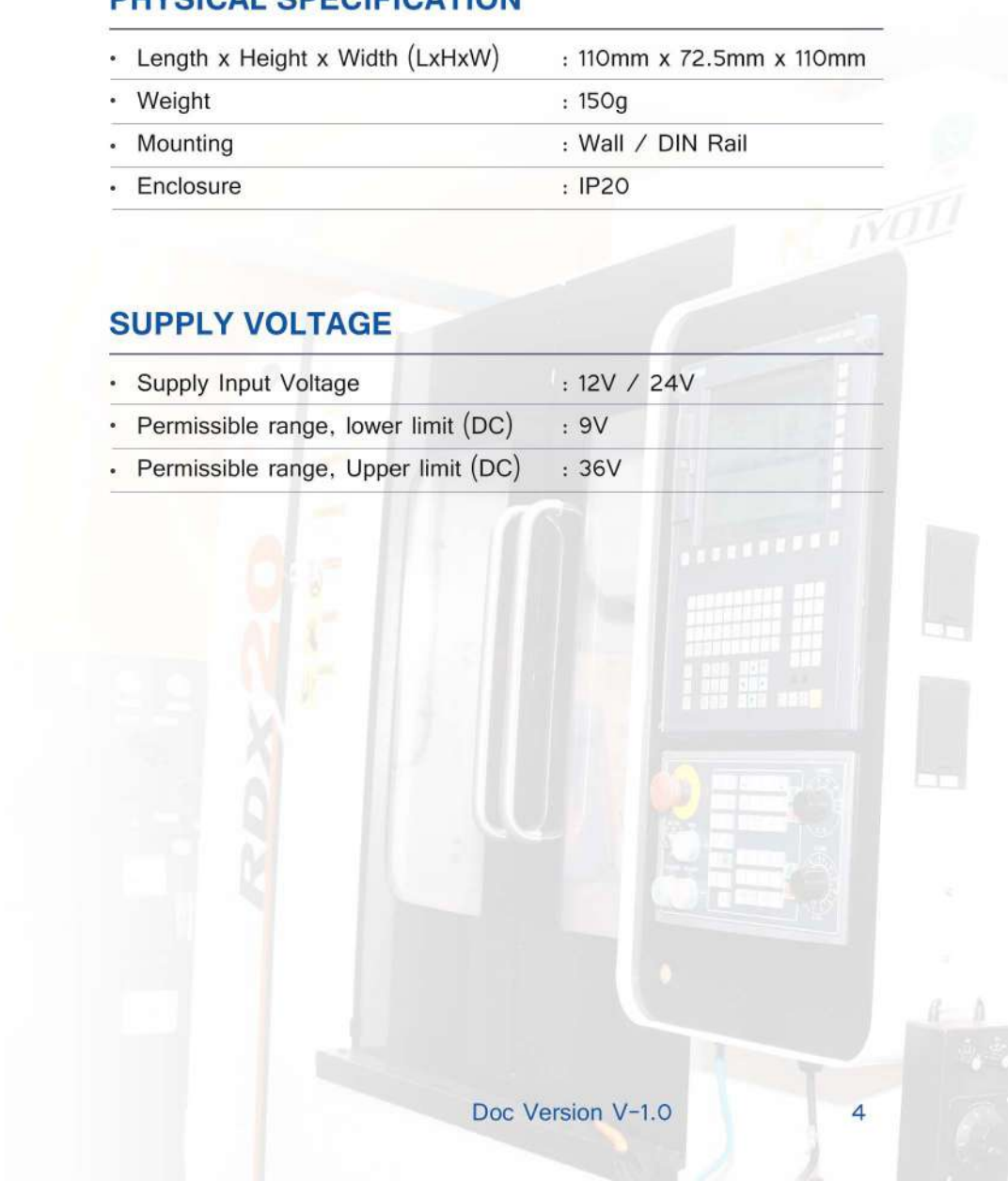
• Memory	: 16 GB
• Data Storing Format	: CSV

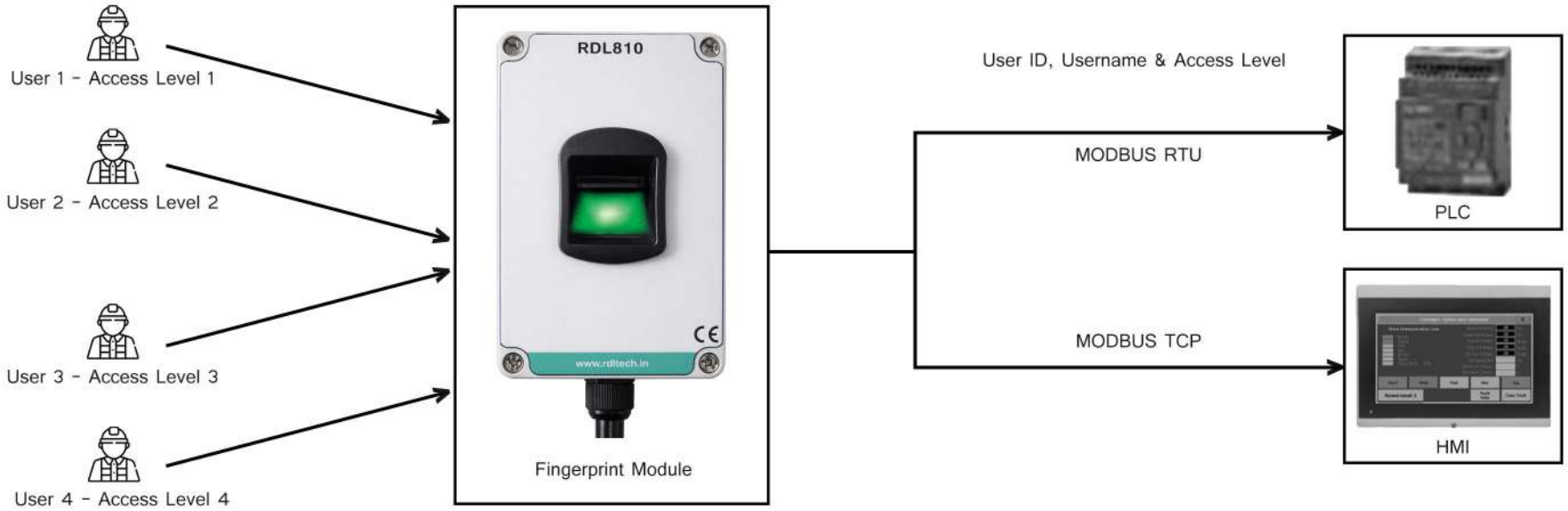
PHYSICAL SPECIFICATION

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

SUPPLY VOLTAGE

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





Access control levels can be registered for each user. The biometric authentication device will provide the user's ID, username and access level to the PLC or HMI via MODBUS communication when the user has successfully authenticated.

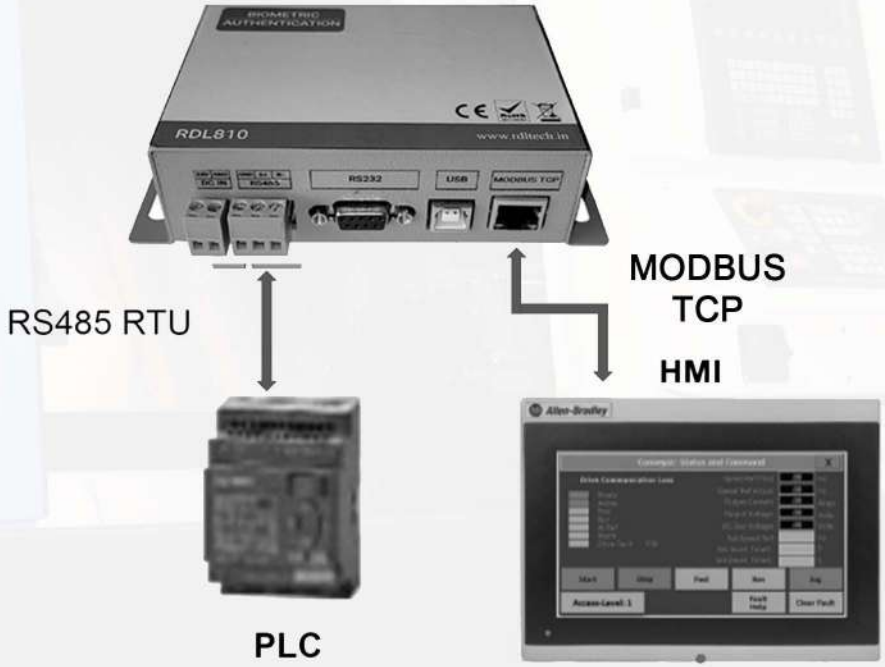
FINGERPRINT MODULE CONFIGURATION

Biometric Authentication Module can be configured in 2 ways

Option 1 : Configuring module using RDL Configuration Manager Software.

Plug and play configuraon Manager, that enable configuraon of all input output ports, communication interfaces and parameters.

Option 2 : Configuring using your existing PLC or HMI over Modbus / RS232.



You can set up Fingerprint Enrollment and associated access control parameters through your current PLC or HMI using MODBUS RTU or TCP.

BIOMETRIC ACCESS CONTROL SYSTEM - RDL810

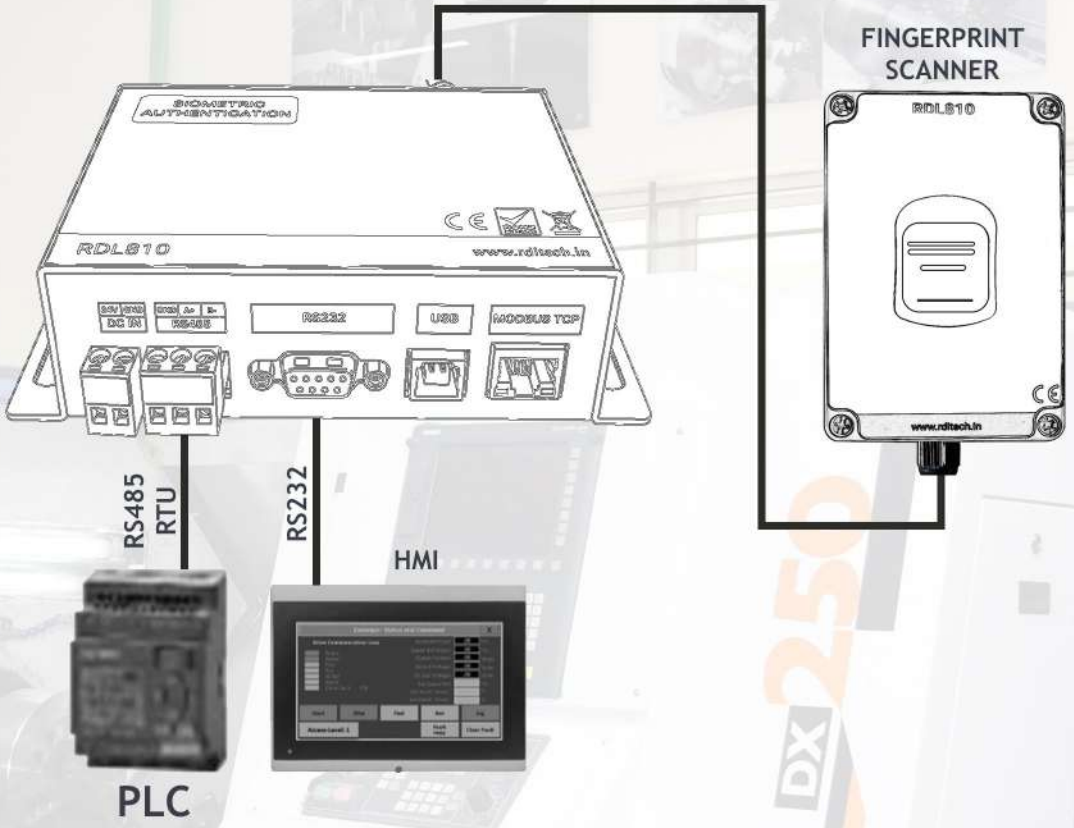
Separate fingerprint reader with an IP65 enclosure, controller unit and connectivity cable are included.

Packages Include :

- Fingerprint access control system - 01
- Fingerprint reader with an IP65 enclosure - 01
- Connectivity Cable - 1 mts

Note :

- You can also connect your PLC over the ethernet work using MODBUS TCP.
- Enquiry for extended connecting cable if more then 2 Mtrs required.



APPLICATION WIRING DIAGRAM

CUSTOM RETROFIT FINGERPRINT MODULE - RDL810A

Separate fingerprint reader, controller unit, and connectivity cable are included

Packages Include :

- Fingerprint access control system – 01
- Retrofit Fingerprint Module – 01
- Connectivity Cable – 1 mts
- Fingerprint Mounting Adapter

Note :

- Enquiry for extended connecting cable if more then 2 Mtrs required.

Custom Retrofit Fingerprint Module

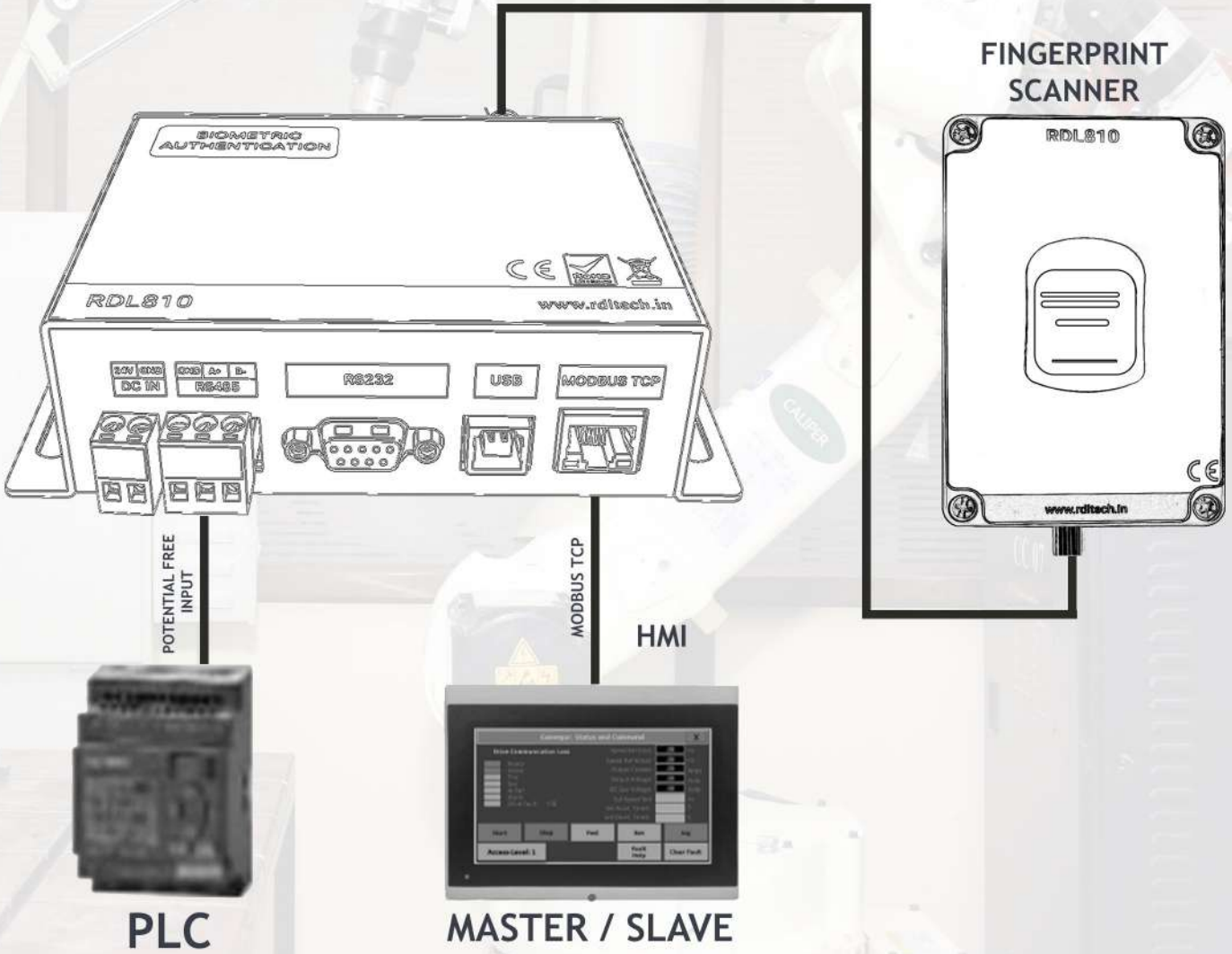
APPLICATION WIRING DIAGRAM - POTENTIAL CONTACT FREE INPUT TO PLC

Switching Machine Job Operation

Privileged access to Machining Processes using different Tools and Materials.

Mono Stable Biometric Switch

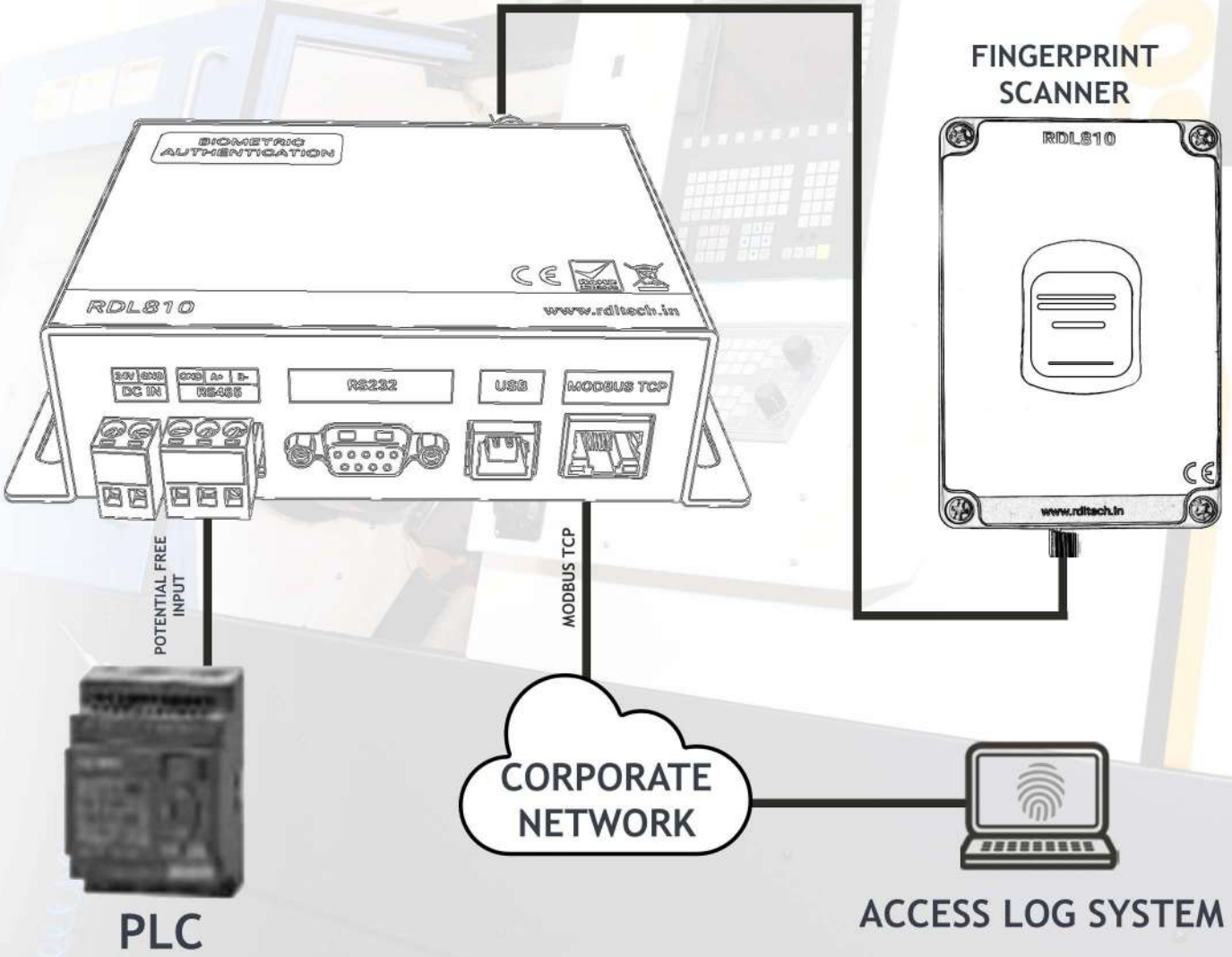
Accountable response to situations like emergency system with valves, shutdown & access control.



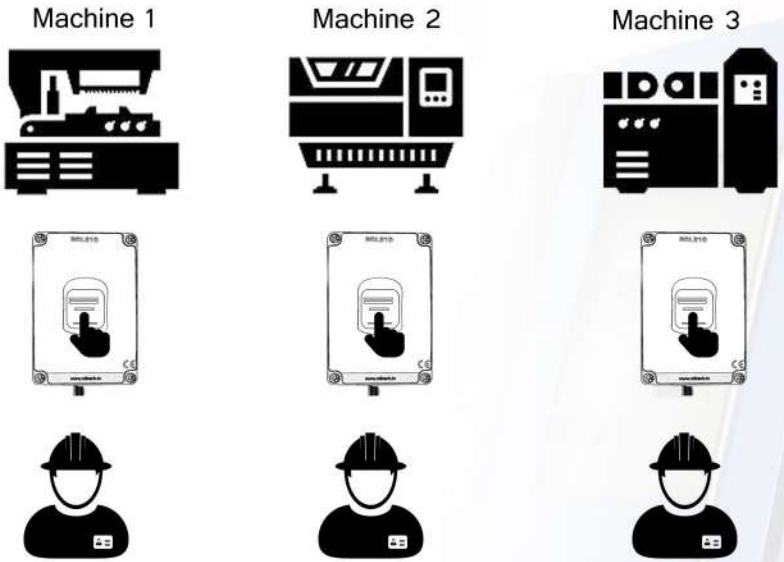
APPLICATION WIRING DIAGRAM - REMOTE ACCESS LOG SYSTEM

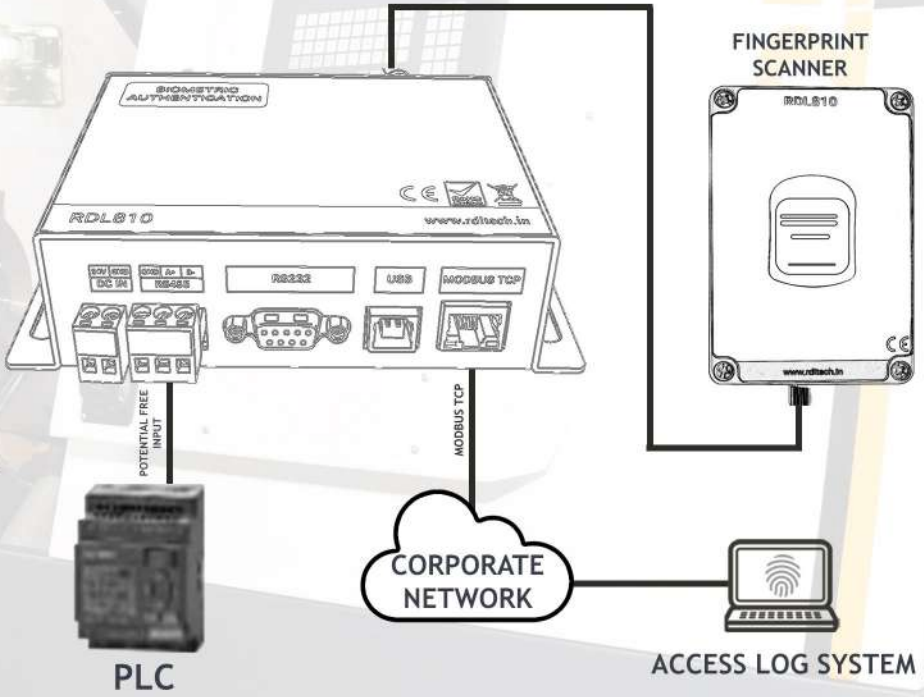
Production Loss Escalation

Accountability of floor managers during machine shutdowns, timely corrective actions to preventing losses.



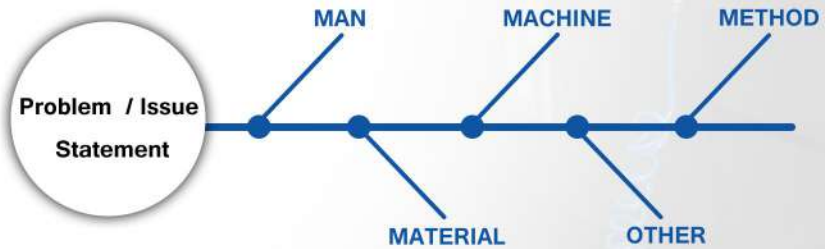
APPLICATION WIRING DIAGRAM - OPERATOR MAPPING WITH MACHINE - 4M STANDARD (MATERIAL, METHOD, MACHINE, MAN)





- Track Operator Performance.
- Track Defect & Production vs Operator.
- Track Training & Performance Enhancement.
- Track Operator Timing.

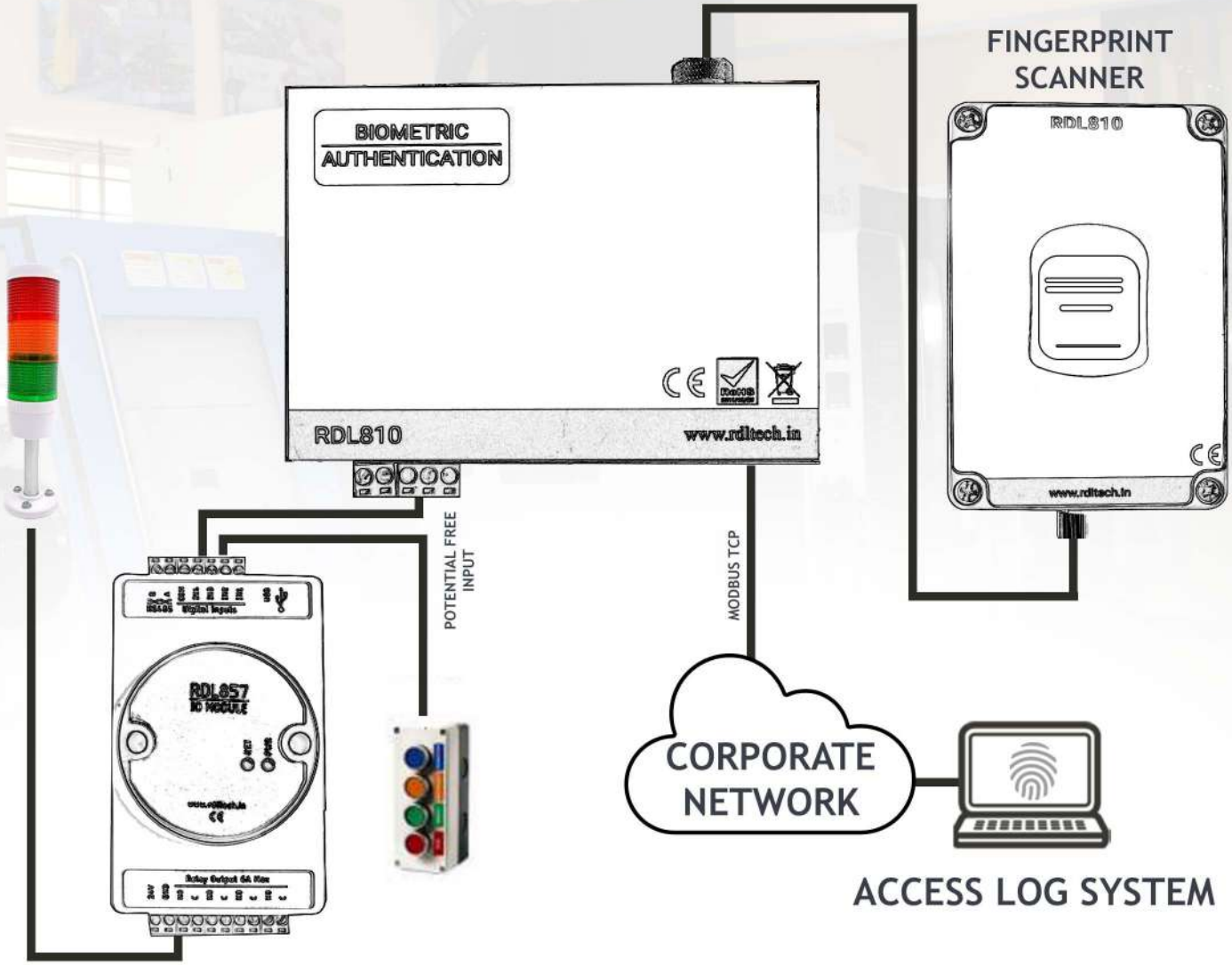
4M Fishbone Diagram



APPLICATION WIRING DIAGRAM - ANDON - BIOMETRIC AUTHENTICATION BASED SIGNAL RESET

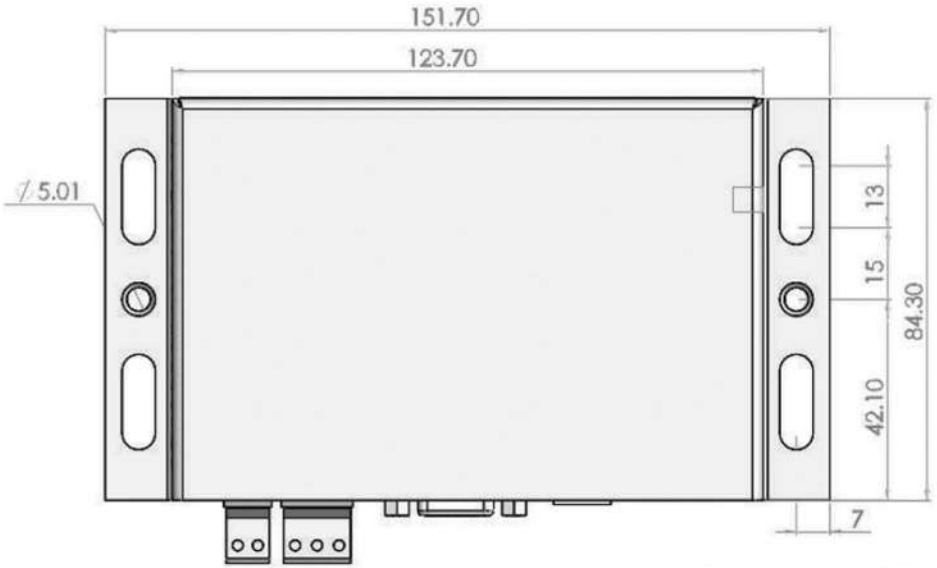
Down Time Escalation

Track service teams response time towards break downs, reducing down time and improved producvity.



DIMENSIONS

Biometric Controller Unit



Finger Print Scanner

ORDER INFORMATION

	RDL810	RDL810A	RDL810B	RDL810C	RDL810D	RDL810E
RS485 RTU	✓	✓	✗	✗	✓	✓
MODBUS TCP	✓	✓	✓	✓	✓	✗
RELAY	✗	✗	✓	✓	✗	✓
FINGERPRINT READER WITH IP65 ENCLOUSURE	NA	✓	✓	NA	✓	✓
ENCLOSURE TYPE - PANEL MOUNT	✓	NA	NA	✓	NA	NA

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 offer product customization, OEM and ODM Services; please contact the sales team @ sales@rdltech.in.
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

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