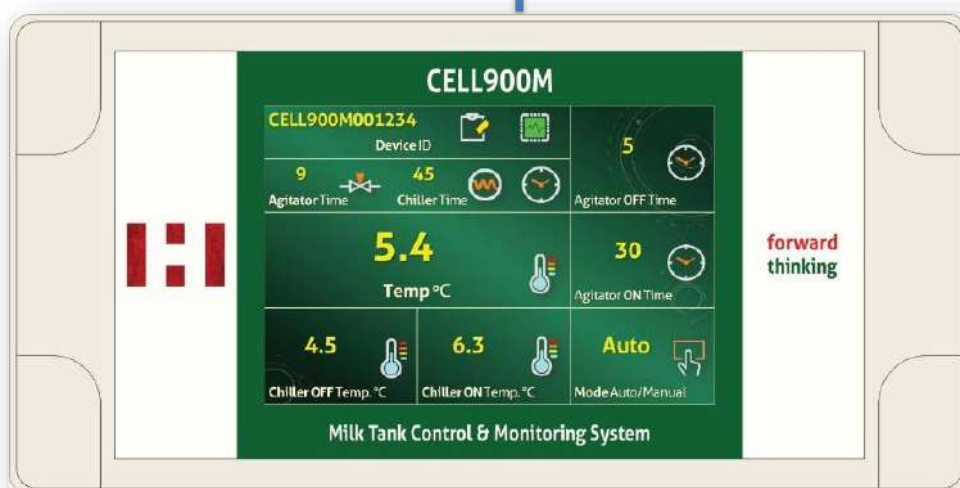
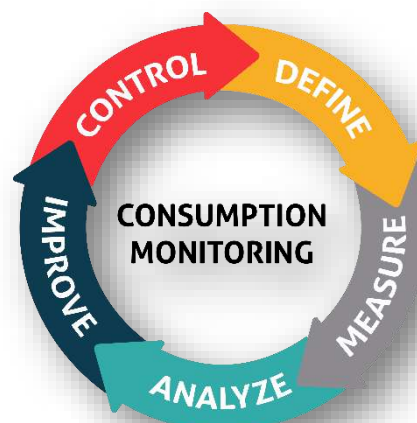




brief features

CELL900M latest version is an intelligent solution for Controlling and Monitoring the milk tank. The Milk Tank Monitoring and Control System equipped with temperature sensors represents a state of the art solution designed specifically for the dairy industry. This system ensures precise monitoring of milk temperature within storage tanks, crucial for maintaining optimal freshness and quality throughout the storage process.

The intelligent CELL900M use advanced dual core MCU and TFT color screen for display multiple parameters. Web enabled intuitive and easy-to-use menu for monitoring, configuration and diagnostics. Changing monitoring mode, Chiller on and off parameters, agitator on and off timer can be done from TFT color display. Modbus RS485 option can be used to connect with any PLC or SCADA

applications customers

APPLICATIONS

In industrial, commercial and remote areas telemetry system for milk tanks with local control and monitoring as well as with temperature sensor. Complete management system for the milk tanks

Preferred areas of use are:

- Mixing tanks
- Milk tanks
- Beverage tanks
- Fleet temperature & humidity monitoring

CUSTOMERS

Industrial and commercial sectors, such as:

- Dairy Farms
- Dairy Cooperatives
- Milk Processing Plants
- Milk Collection Centers
- Dairy Product Manufacturers
- Quality Control Labs
- Research Institutions
- Hotels

technical specifications

FEATURES

The CELL900M telemetry system with latest CPU with forward-thinking algorithms and web server function modules makes it more user friendly.

Informative

CELL900M has 4.5" TFT color HMI touch screen display. User can monitor and setup all the parameter from:

- Local HMI with Admin Account
- Smart phone/Laptop any using web browser.
- Remote server

Configurable

Three modes of operation:

- Auto
- Manual
- Timer

Environmentally Tough

- UPVC housing
- Wiring harness IP65 with water proof glands

Easy To Use

Operation can be done within minutes. Connect the field instrument with pre made wiring harness. Keep it online and configure it by using local App and get the data on online remote server.

Customized Options

CELL900M firmware can be upgradation according to any specific customization.

- Tank temperature heat/cold monitoring
- Tanks temperature controlling and monitoring
- Local control only
- Local & remote control
- Remote control only
- Tank agitator and temperature recipe
- Admin Account only
- Operation Modes

SPECIFICATIONS

Power Supply: 9~20 V DC, 5 W

Password: 3 Level of passwords restriction

- SSID
- Admin Account
- Web Portal

EEPROM:

Data retention 20,000 records (100 B/Record)

CPU:

- Dual core up to 240 MHZ
- Flash RAM: 4 MB
- SRAM: 520 KB SRAM

Digital inputs: 2 Nos. (Non-Isolated)

- Agitator motor
- Chiller compressor

Backup power:

5~7 Hours with Li-ion battery (Optional)

Transmission: User programmable

- Interval: 1~60 Minutes
- Method: Using Mosquito broker via MQTT
- Protocol: MQTT

Configuration:

- Local: HMI with Admin Account
- Remote: Could server using MQTT protocol

Database: Mongo DB API development

Communications:

4 types of communications available

- Modbus RS485 (Master)
- Wi-Fi for Web Server
- SPI/I2C for ADC
- GSM/GPRS 2G/3G (Optional)

Environmental:

- Operating: -10~65 °C
- Storage: -40~85 °C
- Relative humidity: 10~90%

Connections:

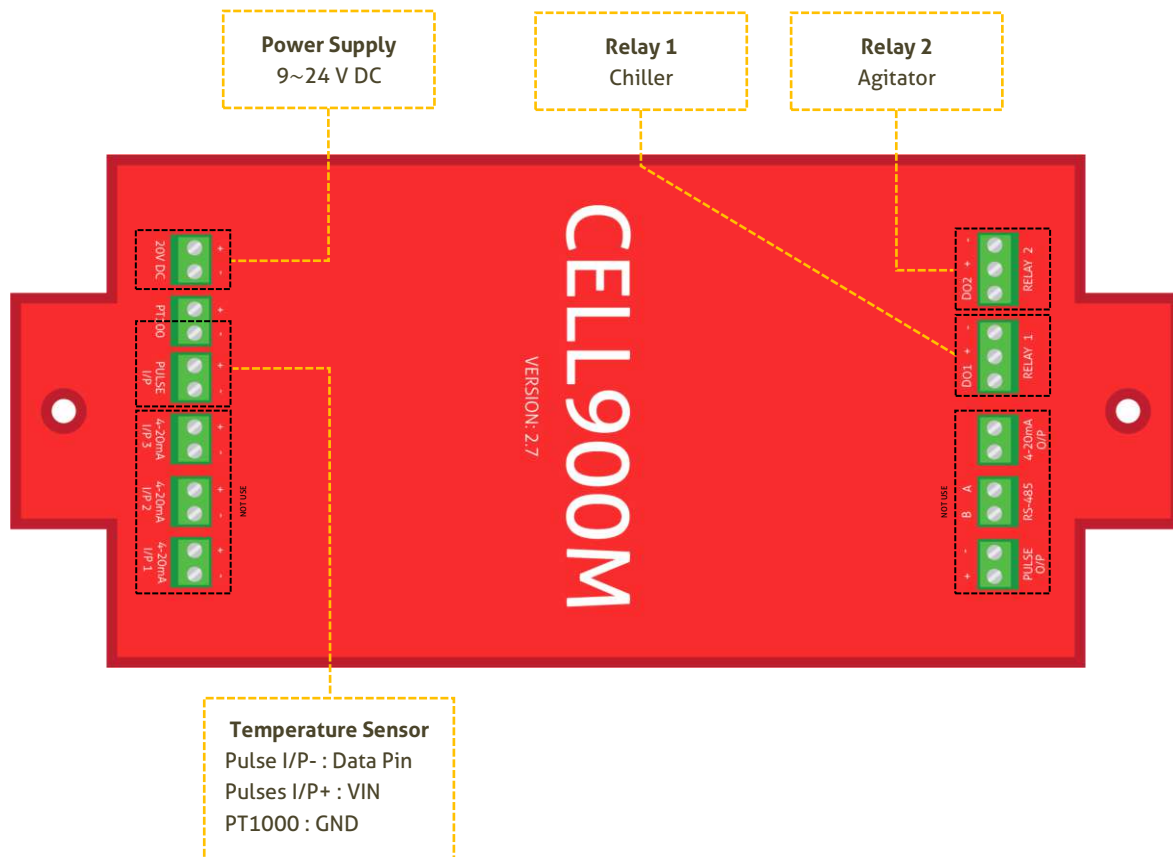
- PCB: Removable screw terminal blocks
- Terminal block: Wire size: 0.5~0.7 mm
- Field connections: Wiring harness 3 meters

Display Housing:

- Housing: UPVC IP 65 water proof
- Mounting: Wall mounting with 2-brackets
- Size: 150mm X 150mm X 100mm

Warranty: 1 year after delivery

wiring connections

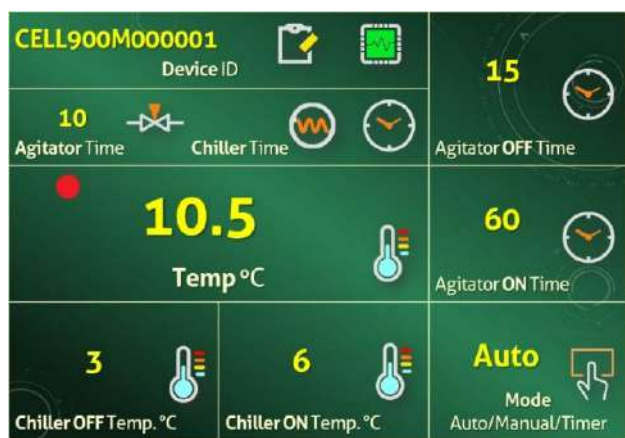


display screens

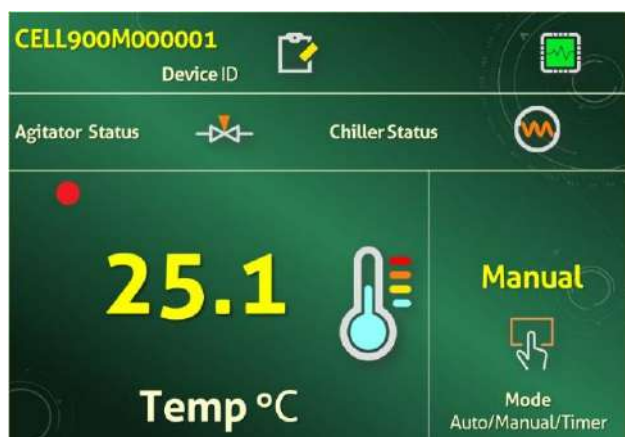
User friendly color Touch industrial grade display, which is displaying all important required parameters.



STARTUP SCREEN



MAIN SCREEN (Auto Mode)
Display parameters:
 Temperature
 Agitator ON Time
 Agitator OFF Time
 Chiller ON Temp.
 Chiller OFF Temp.



MAIN SCREEN (Manual Mode)
Display parameters:
 Temperature
 Agitator Status
 Chiller Status



MAIN SCREEN (Timer Mode)
Display parameters:
 Temperature
 Agitator ON Time
 Agitator OFF Time
 Chiller ON Time
 Chiller OFF Time



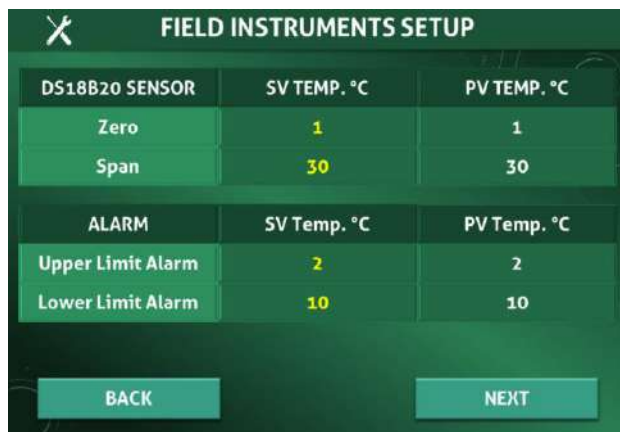
Login Screen
 Password: 77xx



Setting Screen

Display parameters:

Field Instruments Setup
Modbus RS485
Operation Mode0



Field Instruments Setup Screen

Display parameters: (PV → Previous Value; SV → Set Value)

DS18B20 Zero (minimum value)
DS18B20 Span (maximum value)
Upper Limit Alarm
Lower Limit Alarm



Field Instruments Setup Screen

Display parameters: (PV → Previous Value; SV → Set Value)

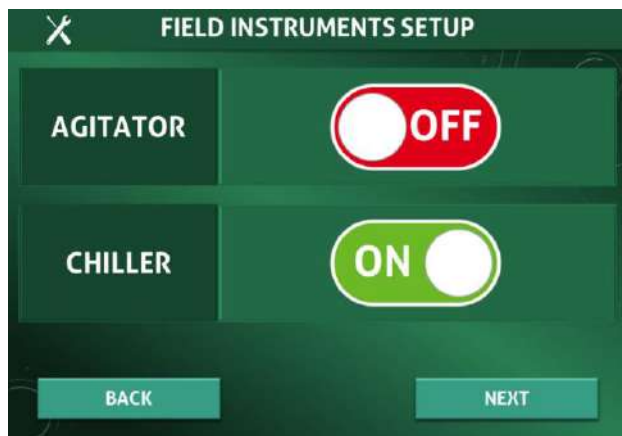
Agitator ON Time
Agitator OFF Time
Chiller ON Temp.
Chiller OFF Temp.



Field Instruments Setup Screen

Display parameters: (PV → Previous Value; SV → Set Value)

Agitator ON Time
Agitator OFF Time
Chiller ON Time
Chiller OFF Time



Field Instruments Setup Screen (Manual Mode)

Display parameters:
Agitator Button
Chiller Button



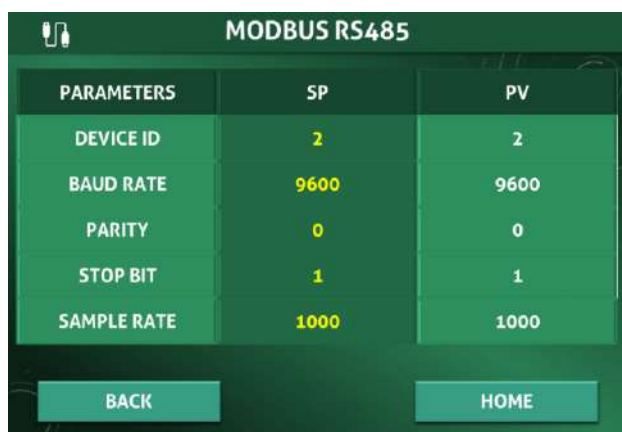
Field Instruments Setup Screen

Display parameters:
Current Password
New Password



Field Instruments Setup Screen

Display parameters: (PV → Previous Value; SV → Set Value)
WIFI SSID
WIFI Password



Modbus RS485 Screen

Display parameters: (PV → Previous Value; SV → Set Value)
Device ID
Baud Rate
Parity
Stop Bit
Sample Rate



Operation Mode Screen

Display parameters:

- Auto Mode (0)
- Manual Mode (1)
- Timer Mode (2)

communication Modbus tags

CONFIGURATION

CELL900M has built-in Wi-Fi module with complete SPIF web enabled stack. Therefore, there is no need of any special data communication hardware or software, an end user can easily configure it by using any browser through HTTP. In configuration mode CELL900M will act as a Master.

DATA LOGGING

Furthermore, CELL900M has comprehensive feature of data transferring of its tags to local or cloud server by using its built-in Wi-Fi module in Salve mode through HTTP/MQTT. By using feature end user can log the data to its local or remote server for online monitoring and reporting purpose.

MODBUS RS485

CELL900M has built-in Modbus RS485 module, therefore, end user can get the data to PLC, DCS, SCADA, OPC server or any data communication module/software.

Standard Modbus tags detail is as under for communication.

DEFINE NAME	TYPE	ADDRESS	
Temperature	Swapped long	0X02	Function code: 03 or 04 Register type: Holding register
Chiller On Time	Swapped long	0X04	
Total Chiller On Time	Swapped long	0X06	

mounting instructions

For proper Milk Tank Monitoring, Milk Tank Control & Monitoring System should be installed properly.



forward thinking

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