

## Condensate Recovery

reduction in steam demand  
reduction in makeup water  
maximizing boiler output  
reduction in blowdown loss  
reduce production cost  
saving achievements



## Condensate Metering Pump OCMP9000



# brief features

OCMP9000 is a Condensate Metering Pump based on condensate level measurements with temperature logic and pressure control algorithm performing 3-functions.

1. **Collect & displace condensate to feed tank**
2. **Steam trap integration**
3. **Flow monitoring**

OCMP9000 are accurate, reliable, and very cost effective as compare with other renown brands. Latest metering pumps are available from 30 Liters to larger volume up to 120 Liters.

## EXCLUSIVE DESIGN

- Skid mounted
- All electronics
- Compact design: All instruments are the integral parts of the pump.
- No extra pipes, valves and NRV
- Inlet electronic steam trap
- Programable temperature presets
- Inlet strainer
- Auto/Manual function
- Programable fill/discharge presets
- Programable fill/discharge timers
- Display: Condensate Flow, Condensate Total, Fill/Discharge Timers, Line Temperature, Tank Level, Tank Pressure

Based on the principle of static pressure level measurement, condensate collection and pump through air/steam to feed water or condensate collection tank. Condensate inlet temperature based steam trap function logic to control flash steam. Programable temperature logic control of inlet actuator ON/OFF. Excellent performance on all environmental condition.

Due to compact and flexible design OCMP9000 can be use in any condensate collection system.

The adjustment feature and flexible customization allows OCMP9000 accuracy to installer no effect when suppress the range, this can help customers to reduce the stock amount and change the range in field.

The display of OCMP9000 uses most advanced dual core MCU (RISC-V) RTOS and TFT color screen for display multiple parameters. Flow rate and totalizer in your choice of engineering units. Web enabled intuitive and easy-to-use menu for monitoring, configuration, and diagnostics.

Local development, several of features can be customized according to customer demand. Web enabled, platform independent, changing of ranges, K-factors, outputs, totalizes and engineering units can be done from any browser.

Setup, configuration and OTA from any smartphone or lab top through Wi-Fi using any browser.

Modbus RS485, 4-20 mA options can be used to connect with any PLC or SCADA.

Cloud based or local server data parsing though Wi-Fi using HTTP post or MQTT method by local net or internet for online monitoring and reporting.

# applications customers

## APPLICATIONS

- Boiler house steam header
- Distributer steam header
- Processing machines condensate collection
- Condensate collection tanks

## CUSTOMERS

- Process engineering
- Chemical industry
- Textiles
- Power plants
- Compressor stations
- Pharmaceuticals
- Food & beverage
- Hotels

# technical specifications

## DISPLAY

### Display Parameters

TFT 2.2" color display  
 Condensate Flow (Liters)  
 Condensate Total (m3)  
 Fill/Discharge Timers (Seconds)  
 Line Temperature (°C)  
 Tank Level (%)  
 Tank Pressure (mBar)  
 Meter ID

### Display Housing

Operating temperatures: 0~70 °C  
 RH: 0~90%  
 Protection: IP 65

### Analog Inputs

4 Nos. 15 Bits  
 ADC response time: 32 ms (Auto)

### Communication

Wi-Fi: Web enables  
 Master/Slave auto switching  
 Protocol: HTTP/MQTT  
 Modbus RS485

### Digital Output

Programable  
 NPN 20 mA

### Analog Output

Loop powered 4-20 mA

### Power Supply

SMPS 100-250 V AC  
 20 V DC, 2 A

### Setup

Calibration, Configuration & OTA: From any web browser through smart phone or laptop Wi-Fi

## INSTRUMENTS

### Pressure Transmitter

Range up to 250 mBar  
 Accuracy: ±1% of reading  
 Output: 4-20 mA

### Line Temperature

PT-1000: 0~200 °C  
 Accuracy: ±1% of reading

### Pilot Valves

Coil supply: 20 VDC  
 Orifice size: 7 mm  
 Load: 45 mW

### Air Actuators

Inlet/Outlet size: ½"  
 Fitting: Flange type

## MECHANICAL

### Condensate Tank

Anti-rust powder coated  
 Sheet thickness: 3.2~5 mm  
 Material: Carbon steel  
 Operating pressure: 0.1~10 Bar  
 Design pressure: 15~20 Bar  
 Capacity: 30 Liters to 120 Liters

### Condensate Inlet

Connection type: Flange  
 Size: ½"  
 Strainer: Integrated  
 Temperature sensor: Integrated

### Condensate Outlet

Connection type: Flange  
 Size: ½"

### Motive Air

Connection type: Flange  
 Size: ½"  
 Pressure: 4-10 Bar

### Air Vent

Connection type: Flange  
 Size: ½"

### Drain

Ball valve  
 Size: ½"

### Air Connections

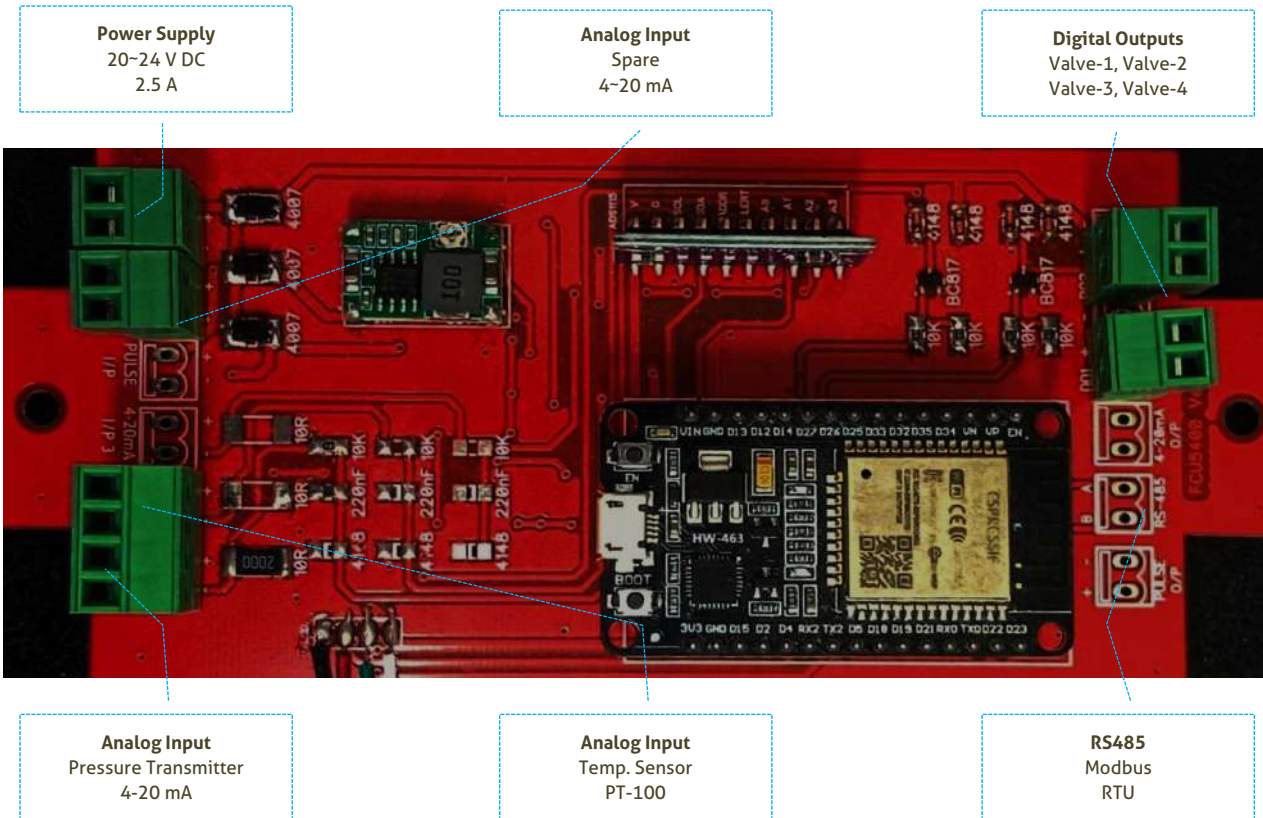
Fast ferule fitting  
 Size: 8 mm  
 Air pressure: 4-10 Bar

# flow calculations

## STANDARD

MODEL	INLET INCH	OUTLET INCH	TANK SIZE LITERS	CONDENSATE CAPACITY KG/H	MOTIVE AIR PRESSURE BAR	MOTIVE AIR CONSUMPTION M3/H
OCMP9000-30	1/2	1/2	30	1,800	4-9	1.35
OCMP9000-60	1/2	1/2	60	3,600	4-9	2.7
OCMP9000-90	1/2	1/2	90	5,500	4-9	4.05
OCMP9000-120	1	1	120	7,200	4-9	5.4

# wiring connections

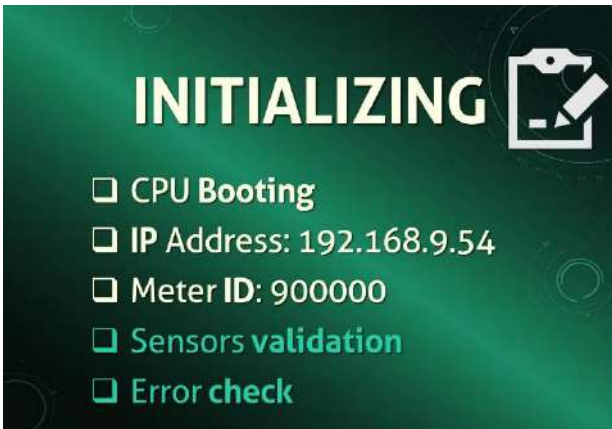


# display screens

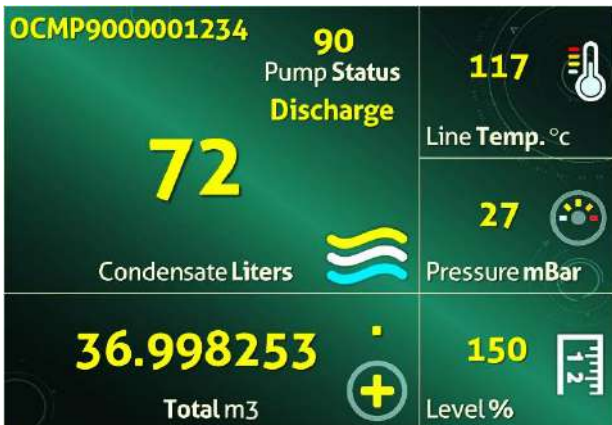
User friendly color TFT LCD industrial grade display, which is displaying all important required parameters.



STARTUP SCREEN



INITIALIZING SCREEN  
System Boot  
Assigning: ID & IP  
Sensors Validation



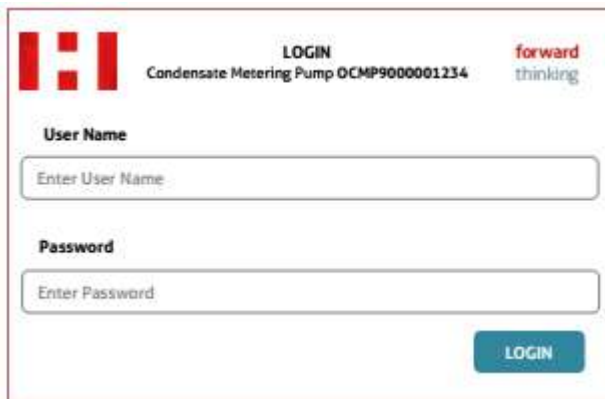
MAIN SCREEN  
Display metering parameters:  
Line temperature  
Tank pressure  
Level  
Totalizer  
Condensate volume  
Pump fill  
Pump discharge  
Device ID

# setup configuration

A user-friendly interactive web enabled browser interface for flow meter parameters configuration. Every screen is self-explanatory.



**SIGN IN Page**  
For display flow & totalizer  
IP: 192.168.9.54  
SSID: 90000xxxxx  
Password: hunchxxxxxxxxxx



**LOGIN Page**  
User Name: hunch  
Password: 77xx

**PROCESSING**  
Condensate Metering Pump OCMP9000001234

PARAMETERS	PROCESS VALUE
Device: ID	OCMP9000001234
Condensate: Liters	63
Total: m3	1234.108
P.T: ADC	12,250
Pressure: mBar	36
Tank Level: %	45
Tank Fill Time: Seconds	900
Tank Discharge Time: Seconds	25
Tank: Status	Fill
Temperature: ADC	9,540
Temperature: °C	120
Run: Hours.Minutes	2.16

SETTINGS CLOSE

PROCESSING Page  
Parameter display page

**SETTINGS**  
Condensate Metering Pump OCMP9000001234

PARAMETERS	SET VALUE	NEW VALUE
Device ID	OCMP9000001234	
Steam Trap	Enabled	Select Option ↓
Totalizer m3	1234.108	
Pressure Shunt (R)	200	
Pressure Span mBar	250	
Tank Level 0% mBar	5	
Tank Level 100% mBar	90	
Tank Discharge Level %	81	
Tank Volume Liters	99	
Tank Fill Time (Seconds)	1,080	
Tank Discharge Time (Seconds)	45	
Temp. Zero ADC	7,272	
Temp. Span ADC	13,333	
Temp. Span °C	260	
Valve Open Temp. °C	99	
Valve Close Temp. °C	127	
Modbus ID	5	
Baud Rate	9600	Select Option ↓
Parity	Odd	Select Option ↓
Stop Bits	1	Select Option ↓
Modbus Delay ms	1	
SSID	Fiber Link	
Password	78900789	
Log Interval Minutes	60	

RESTART OTA CLOSE

SETTINGS Page  
Configuration  
Calibration



OTA Page  
Over The Air firmware upload

## communication Modbus tags

### CONFIGURATION

OCMP9000 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 OCMP9000 will act as a Master.

### MODBUS RS485

OCMP9000 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.

### DATA LOGGING

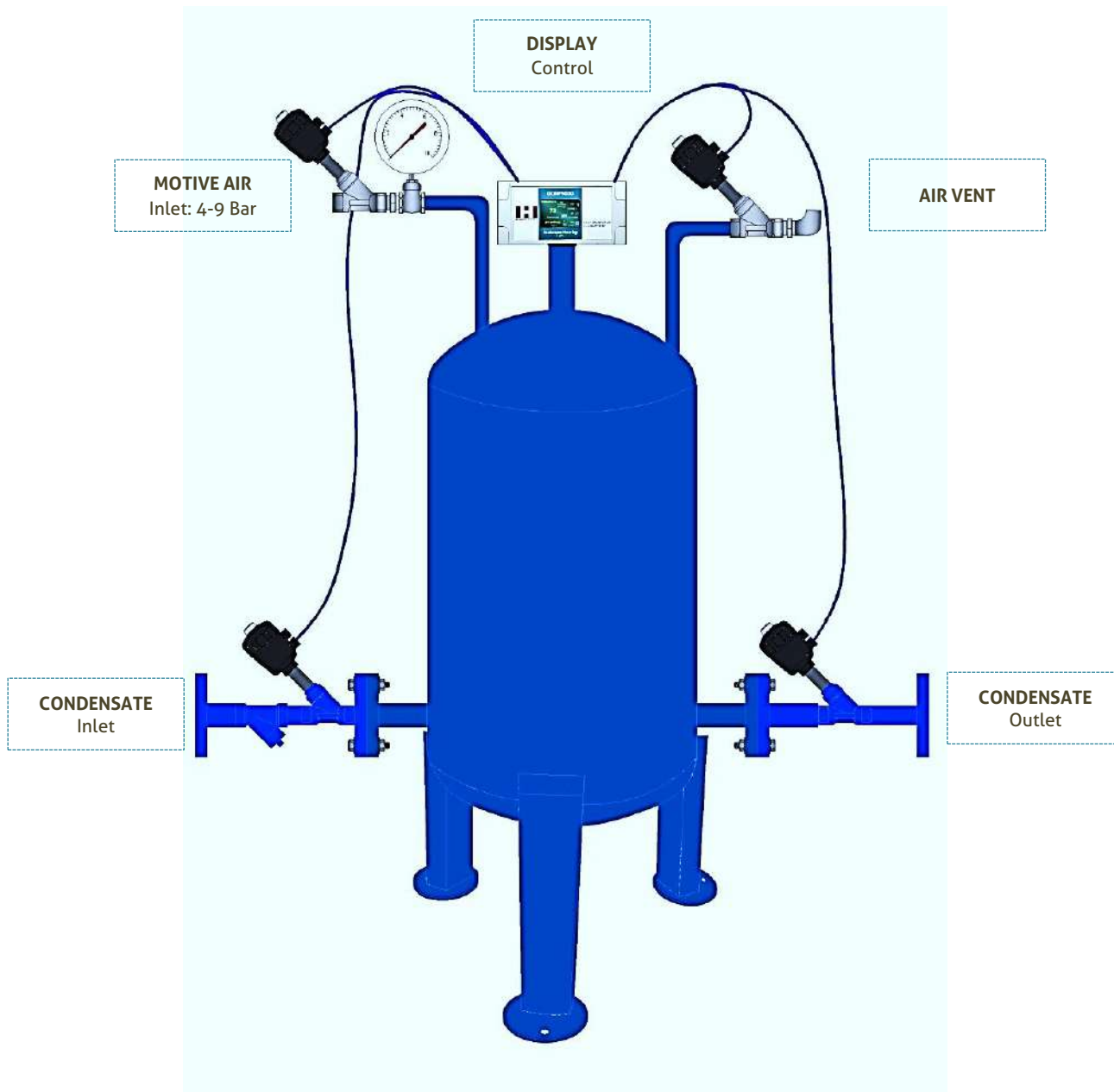
Furthermore, OCMP9000 has comprehensive feature of data transferring of its tags to local or cloud server by using its built-in Wi-Fi module in Salve mode through HTTP/MQTT. By using feature end user can log the data to its local or remote server for online monitoring and reporting purpose.

Standard Modbus tags detail is as under for communication.

DEFINE NAME	TYPE	ADDRESS	
Condensate Liters	Swapped long	0X02	Function code: 03 or 04
Total	Swapped long	0X04	
Device ID	Swapped long	0X06	
Level	Swapped long	0X08	Register type: Holding register
Pressure	Swapped long	0X0A	

# mounting instructions

Installation and commissioning should be completed under trained HUNCH Automation engineer's supervision for taking proper operation of Condensate Metering Pump.



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