Ideate Informatics LLP

OPERATING INSTRUCTION AND MAINTENANCE MANUAL FOR BOOSTER COMPRESSOR

MODEL : - IIL-400 SCMH

CLIENT : - HOGPL

CONTENTS:-

A . Advices

GENERAL ADVICES :

This machine is a safe device and does not involve any risks with regard to the safety of the operators if used correctly.

Every reasonable precaution relative to safety has been taken into consideration during the design and manufacture phase.

The following precautions must be taken when using the machine: -

- All moving components must be protected.

- It is prohibited to remove the metal safety guard of the drive joint if not for carrying out maintenance jobs, which is to be done only when the compressor is stopped.

- The compressor must not be operated by untrained personnel.

- The maintenance procedures must be carried out carefully to avoid personal injury and material damage.

- When the machine is under guarantee, only Ideate Informatics LLP. (and our authorized personnel) may work on the compressors, gas and electrical systems. It is therefore prohibited for others to do any jobs, otherwise the guarantee will be annulled. Ideate Informatics LLP will not be liable for any failure, breakdown, accidents due to non-compliance or failure to follow the guidelines in this manual.

- Once the guarantee has expired, the customers may service the machine, but only with regard to the pumps (it is prohibited to dismantle the casing and crank gear), strictly observing the relative descriptions. In the case of doubt or if something is not quite clear, contact our customer service department immediately. Ideate Informatics LLP declines all liabilities for personal injuries or material damages due to incorrect procedures or jobs done by others.

- No special tools are required to service the machine, however a special kit can be purchased from Ideate Informatics LLP to facilitate these jobs.

- It is prohibited to touch gas delivery pipes both while the compressor is running and also after it has stopped, as there are hot points on which the operator could be scolded. Therefore, before starting any maintenance jobs check the temperature of the various components (both of the compressors and of the relative motors, including the internal combustion motor if installed). Also refer to the “PERIODIC MAINTENANCE SCHEDULE” section.

- Moving components must not be serviced.

- Flammable material must not be brought near the compressor.

- The area around the unit must be kept clean.

- Before starting any maintenance jobs on electrical components, ensure that the lines that supply electricity to the external power supply system and the main switch are disabled.

- Refer to the electrical manual and relative indications if any anomalies are encountered or to resolve any error messages that appear on the display of the electrical control panel and also to the “COMPRESSOR STOPPAGE” section. - Do not reset the automatic magneto thermal contact makers that have tripped due to an overload until the cause for which it tripped has been found and rectified.

- **Proceed as follows for all procedures that involve the disassembly of any part in contact with gas: Shut-off the stop valve on the in-take and delivery lines of the compressor.**

- Open the discharge taps of the separators and the other discharge taps so that all the gas is discharged.

- The presence of compressed gas is dangerous.

- Take all the required safety precautions.

- Remember that the operator can STAND NEAR THE COMPRESSOR only where the START and STOP push button control panel is situated, so that the compressor can be started after having ensured that no unauthorised person is standing nearby or that nobody is servicing and/or checking the unit.

B. Reference Standards

Compressor has been designed and built in compliance with the Machinery Directive and all applicable harmonized standards and currently in force.. All regulated parts of the machine are built on the basis of the relevant standards:

- Electrical components: in accordance with CENELEC
- Pipes and fittings: in accordance with DIN
- Safety valves: in accordance with PED

C.General description

The present machine is a two stages hydraulic gas compressor, with suction pressure (from cylinder trucks) that can vary between 30 and 180 bar and discharge flow pressure between 200 and 250 bar. Inside the cylinder pistons slide with reciprocating movement. The mechanical actuation is through a hydraulic pump driven by an explosion-proof electric motor. The methane gas, coming from the network, it's filtered, and then sucked into the chamber of the 1st stage, through two inputs respectively located at the top and at the bottom of the cylinder, inside of which it's compressed by the reciprocating movement of the piston. The filtration of inlet gas is mandatory because small foreign bodies can damage the cylinder. The compressed gas exits from the cylinder at the discharge pressure through two outputs (one at the bottom and the other at the top) to enter the first heat exchanger gas / water. The gas, compressed in the first cylinder, enters the second stage chamber to undergo the second compression. From the cylinder, after having passed through the second heat exchanger gas / water, it's sent to for use at high pressure (200-250 bar). In the circuits of the gas, on delivery of both stages, are mounted a pressure switch and a safety valve that will intervene whenever the threshold values of the set pressure is exceeded. The line between the gas supply and the machine must be fitted with one shut-off valve gas.

D. Technical data

Compressor type: Hydraulic Booster

Number of cylinder: 1

Number of compression stage: 2

Operation: Continuous

Compressed gas: Natural Gas

Gas Suction requirements:

Minimum pressure: 30 bar

Maximum pressure: 180 bar

Gas temperature: 30^0C

Gas Discharge requirements:

Maximum pressure: 250 bar

Gas temperature after final cooling: about 10^0C

Performance:

Suction pressure (bar)	Discharge pressure (bar)	Capacity (m^3/hr)
30	250	150
50	250	250
100	250	500
200	250	1000

Environment Operational Temperature:

Minimum Temperature: 10^0C

Maximum Temperature: 45^0C

Hydraulic oil:

Quantity: 250 to 400 litres

Recommended Oil: HLP 46 or AGIP 46

Oil Specification:

Density @ 15^0C: 0.880 g/cm^3

Viscosity @ 40^0C: 46 mm^2/s

Viscosity @100^0C: 6.7 mm^2/s

Viscosity Index: 97

Flash Point: 226^0C

Pour Point: -25^0C

Ash, Sulfate: 0.17 g/100g

Neutralization number, acid: 0.5 mg KOH/g

E Oil circuit

Oil is sucked by a piston pump with variable displacement and constant power control. Oil is cooled through the heat exchanger. There is a 25 micron cartridge filter, installed downstream of the pump to filter all the oil flow. Oil level in the tank must be maintained at medium level of the visual indicator. Maximum permissible temperature of operation is 60°C. It is recommended to use oil HLP 46 or AGIP 46 (or similar).

Oil tank filling

1. remove the filler cap;
2. fill the tank up to the maximum level indicated on the visual;
3. screw the cap on the tank;
4. reboot the machine and check that the oil level reaches the middle of the visual.

In case of compressor shutdown, check on the control panel if the anomaly is that the oil level drops below the predetermined minimum threshold. In this case, repeat the filling operation until the right level.

F.Transport and packaging

There is no need to pack the machine to carry it on vehicles. For transports by ship, it will be used wooden boxes or suitable containers.

G Uplifting

THE COMPRESSOR UNIT is lifted by means of cables run through the eyebolts located at the four corners of the metal structure.

H. Installation

Installation does not require foundations; the machine is simply placed directly on the floor which has obviously to be plane. Machine base is equipped with holes for any eventual fixing dowel.

I. Connection of the machines

Make the connections following the indications given in the below. Ensure to secure the connections firmly and correctly, using hemp or Teflon with plumber's paste for the water fittings to ensure a perfect seal. Note: The gas feeding pipes are to be washed with gas before starting the system. Also ensure that the feeding line has been efficiently discharged.

Sr. No.	CONNECTION THE COMPRESSOR UNIT	Sizes
1.	Inlet gas	1"
2.	Delivery gas low pressure to Cascade	3/4" OD
3.	Delivery gas medium pressure to Cascade	3/4" OD
4.	Delivery gas high pressure to cascade	3/4" OD
5.	Delivery gas low pressure to Dispenser	3/4" OD
6.	Delivery gas medium pressure to Dispenser	3/4" OD
7.	Delivery gas high pressure to Dispenser	3/4" OD
8.	Water Inlet	2"
9.	Water Outlet	2"
10.	Instrument air	1/4"
11	Vent	1"
12.	Drain	1/4"

Electrical connections

For the power supply of the machine making the electrical connections from the power supply to the motor. For auxiliary supply, make the electrical connections from the power supply to the junction box present on the machine. The connection between the machine and the control panel is done with one of the following measures:

- power cables and the cables of the auxiliary circuits must be protected by metal sheath covered in plastic or metal channel or conduit through which can be the same for the two types of cable;
- cables for intrinsically safe circuits must be separated from the power cables through:
- additional conduit, separate from the power cables;
- separated by further protective insulating sheath if brought within the same duct as power cables.

The separation between the danger zone and safe zone passes through one of the following ways

- wells for cables covered with sand;
- through the wall with EEx-d cable glands.

Connection should be done respecting the numbers indicated by the manufacturer.

J Noise

The environmental noise measured at 1 meter distance is 76 dB (A).

K Operating Parameter

Sr. No.	Parameter	Range (Min)	Status
1.	Voltage	375-450 V	
2.	Low bank pressure	180-200 bar	
3.	Medium bank pressure	200-220 bar	
4.	High bank pressure	220-250 bar	
5.	Stage 1	<250 bar	
6.	Stage 2	< 250 bar	
7.	Suction	30 to 180 bar	
8.	Water temp.	35 to 55 deg.	
9.	Auto start	190 bar	
10.	Auto stop	240 bar	
11.	Oil temperature	35 to 60 deg.	

L. Starting Up

FIRST STARTING

Make sure to know well the safety devices and the functions of the control instruments.

List of preliminary jobs to be performed with the electrical control panel turned off:

- Oil level of the tank
- Water level of the expansion vessel situated on the radiant unit

• OPERATIONS TO PERFORME TO START THE COMPRESSOR UNIT

1. Open the adduction line to the compressor VERY SLOWLY and check for any leaks along the first stage line.

2. Open the air compressed circuit.

3. Manually operate the solenoid valves on the compressor by setting the little level, situated between the valve casing and the coil, in the upright position. When gas is no longer heard running through, set the lever back in the flat position. little level for the manual operating of the solenoid valve

4. Open all the manual suction and delivery valves of the compressor.

5. Press the start button on the compressor and check the rotation direction of the main electric motor. WARNING! this is the most tricky phase. A number of people are required to make the checks simultaneously of all the pressure gauges, plus one person needs to keep his finger on the stop push button. Make sure that the inter-stage pressures do not rise suddenly. If this should occur check the opening of the air valves between the various stages.

Rotation direction of the electric motors

Compressor operating electric motor: Anti-clockwise, looking at the shaft from the fan side

Oil pump electric motor: Clockwise, looking at the shaft from the fan side

Water pump electric motor: Clockwise, looking at the shaft from the fan side

List of the alarms:

- Oil level alarm (normally closed contact of the electrical level on the oil tank of the compressor)

Cause: incorrect electrical connection

- low oil level Low air pressure alarm (normally open contact that closes when a low air pressure is detected by the light blue pressure switch at the bottom of the solenoid valves)

Cause: low air pressure (alarm set at 6 bar) incorrect connection.

- Over-pressure alarm (normally closed contact of the grey pressure switch connected to the outlet of the last stage with an 8 pipe)

Cause: incorrect connection (alarm set at 260 bar)

- High water temperature alarm (black bulb situated on the water inlet pipe with normally closed contact).

Cause: incorrect connection

Note: Considering that all alarm contacts are CLOSED in normal conditions, it is sufficient for even only one wire not to be tight for an alarm to be displayed

M Stop

- Normal stop: press the compressor stop button then switch off the circuit breaker in the electric panel. It is also recommended, at the end of each working day, to close both the inlet and outlet gas taps and those of water inlet and outlet.

- working cycle stop: compressor stops automatically when the maximum working pressure is reached. Automatic start of the compressor will be:
- at the reaching of the nominal pressure set on pressure switch; - with manual control by button.
- stop in case of alarm block: compressor block will happen because of the following abnormalities:
- minimum suction gas pressure;
- maximum 2nd stage delivery gas pressure;
- maximum hydraulic oil temperature;
- minimum hydraulic oil level;

For compressor restart follow the procedure below:

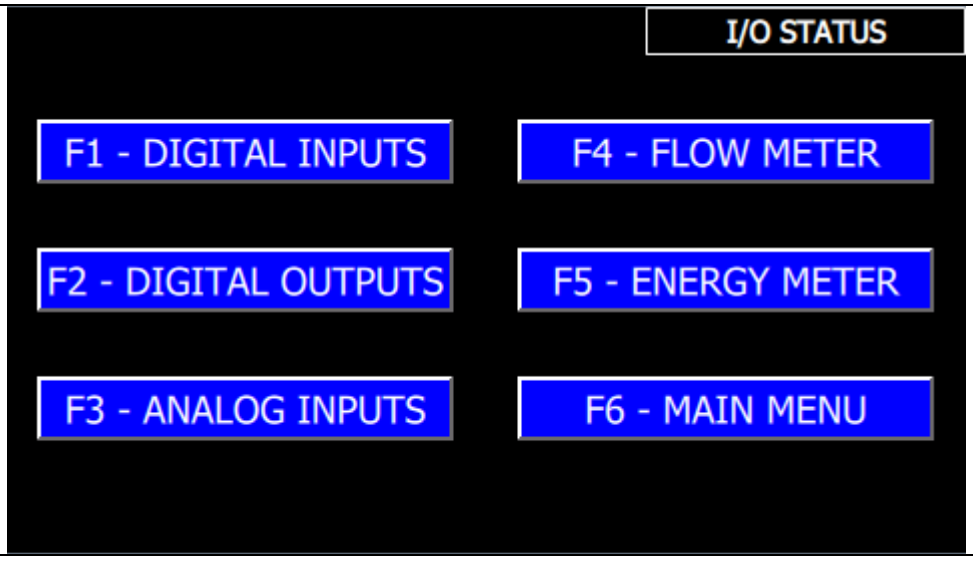
- check on the control panel display the type of alarm;
- remove the anomaly (see section analysis alarms cabinet);
- press the "reset" button on the control panel;
- if the alarm has disappeared from the display, restart by pressing the compressor start button.
- emergency stop: in case of a sudden "danger" press the red "mushroom button" in the electric panel (alternatively press another switch on the place to remove power to the entire electrical system); once stopped the alarm, reset the red "mushroom button" (if it has been used); press the "reset" button on the control panel; restart the compressor by pressing the start button on the machine.

N. Use of Compressor Keys:

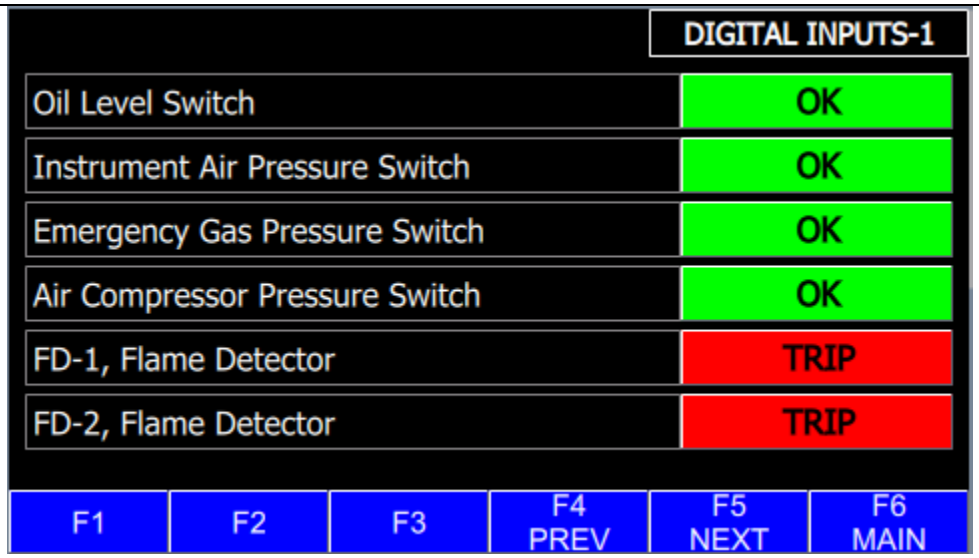
1. MAIN SCREEN

Screen Name: Main Screen **Description:** Welcome screen to provide information regarding Supplier Name. **Operating:** Press on Operator Button to navigate to Screen	

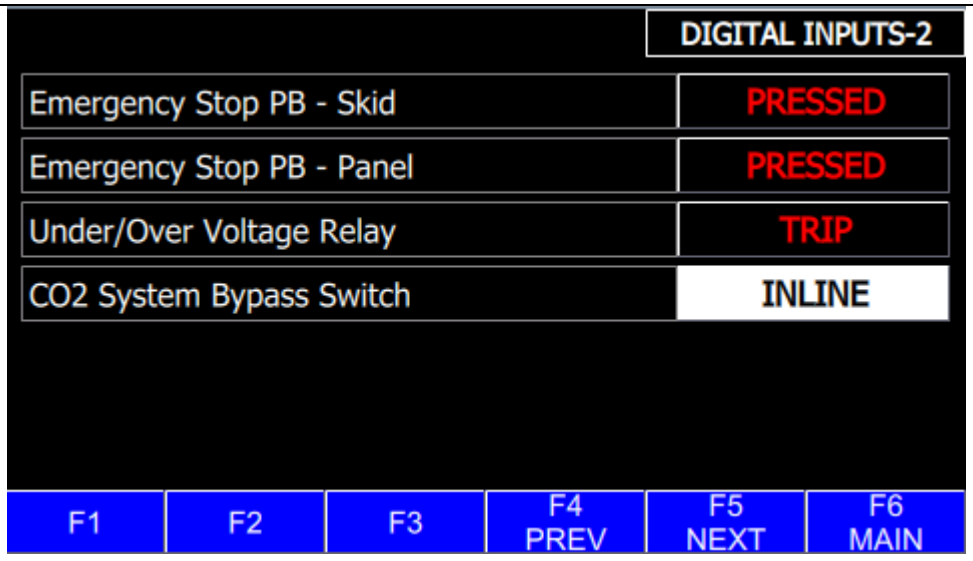
1. I/O STATUS

Screen Name: Input/output Status **Description:** Operation Menu to navigate to various screens. **Operating:** Click On Operator Button to navigate to Screen.	

2. DIGITAL INPUT STATUS – 1

Screen Name: Digital Input -1 **Description:** Displays Digital Inputs Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

3. DIGITAL INPUT STATUS – 2

Screen Name: Digital Input -2 **Description:** Displays Digital Inputs Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

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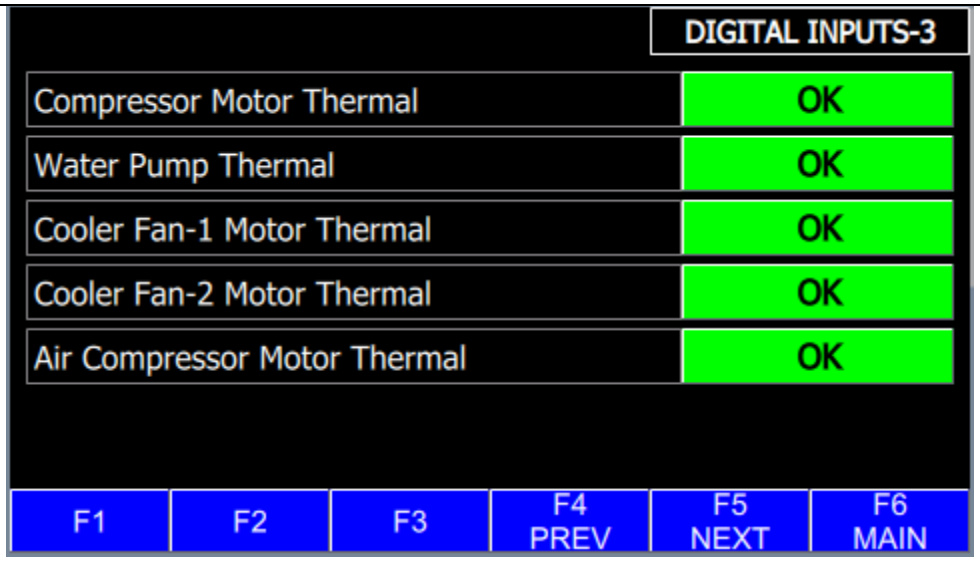
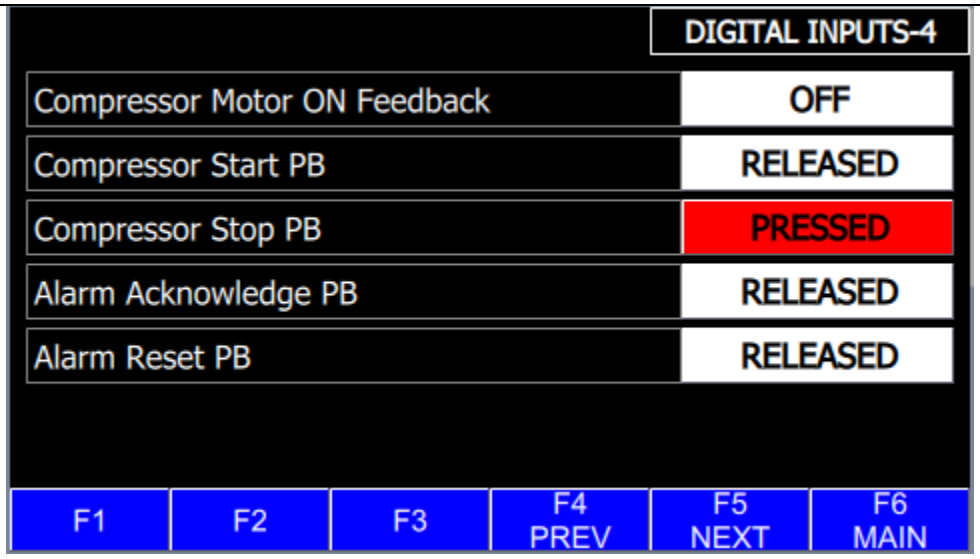
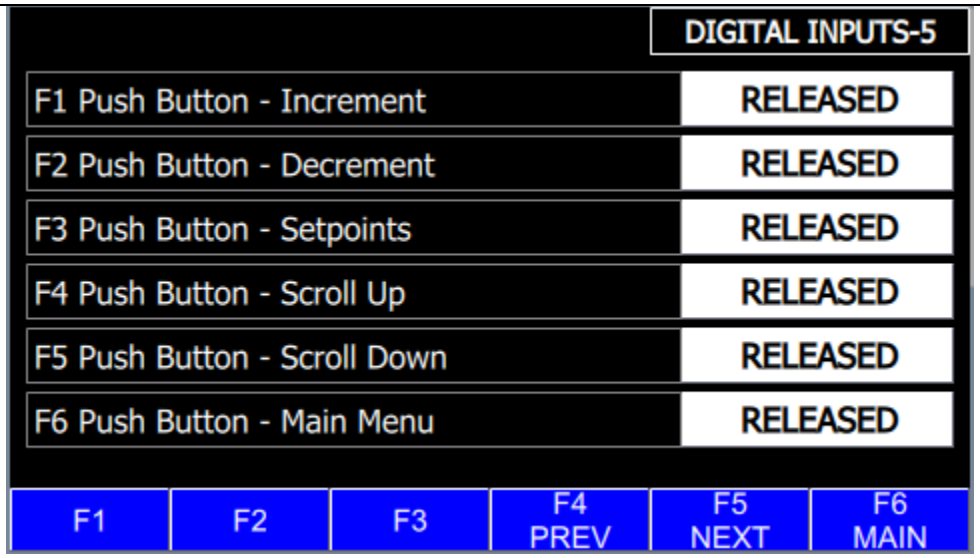
4. DIGITAL INPUT STATUS – 3

Screen Name: Digital Input -3 **Description:** Displays Digital Inputs Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

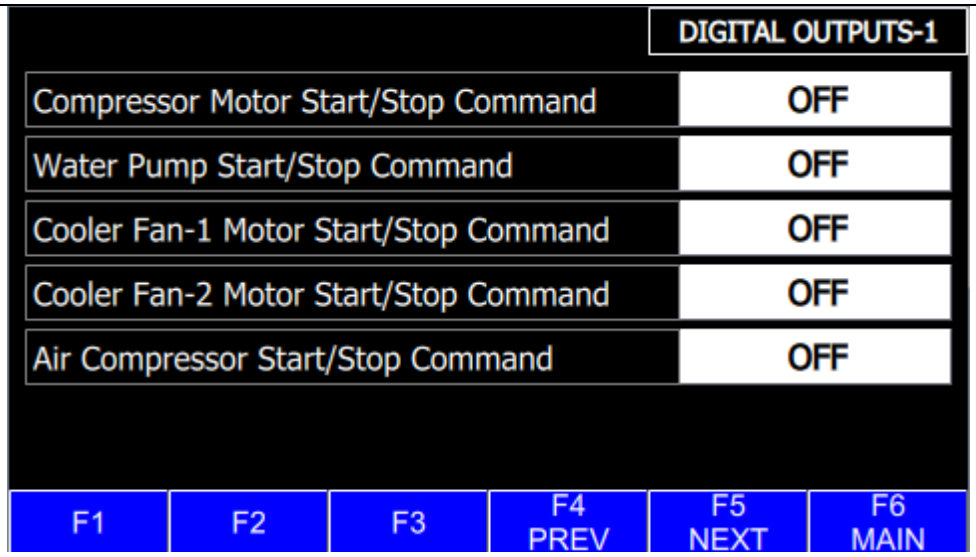
5. DIGITAL INPUT STATUS – 4

Screen Name: Digital Input -4 **Description:** Displays Digital Inputs Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

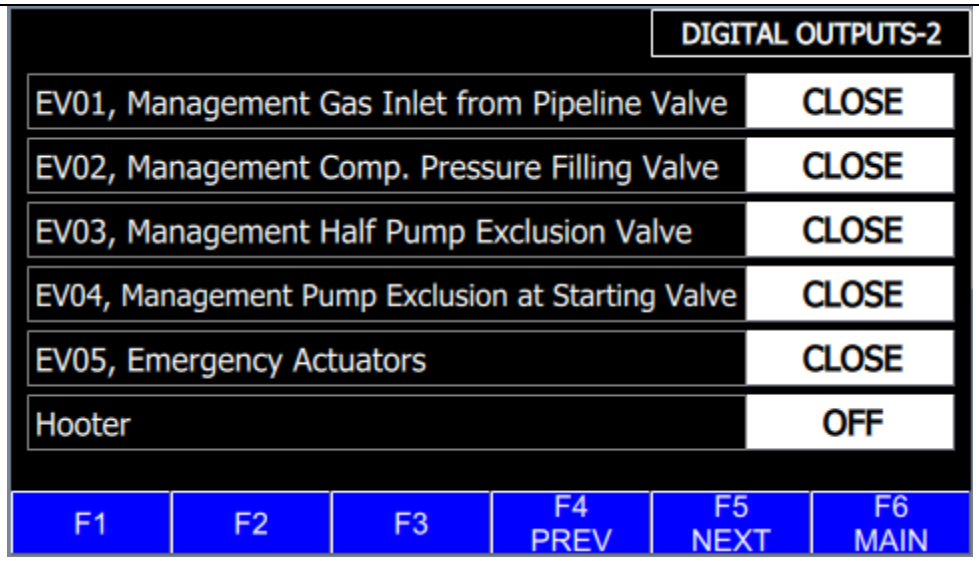
6. DIGITAL INPUT STATUS – 5

Screen Name: Digital Input -5 **Description:** Displays Digital Inputs Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

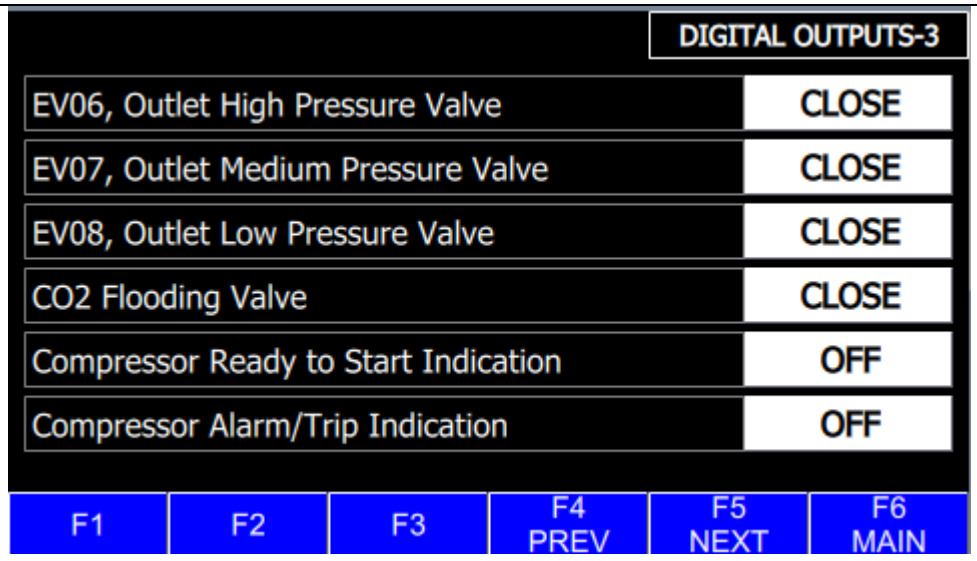
7. DIGITAL OUTPUT STATUS – 1

Screen Name: Digital Output -1 **Description:** Displays Digital Output Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

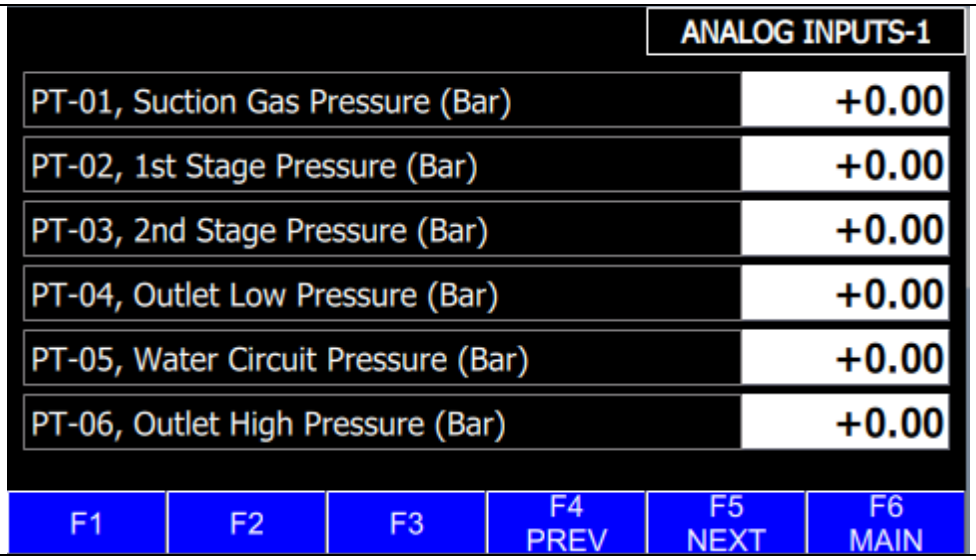
8. DIGITAL OUTPUT STATUS – 2

Screen Name: Digital Output -2 **Description:** Displays Digital Output Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

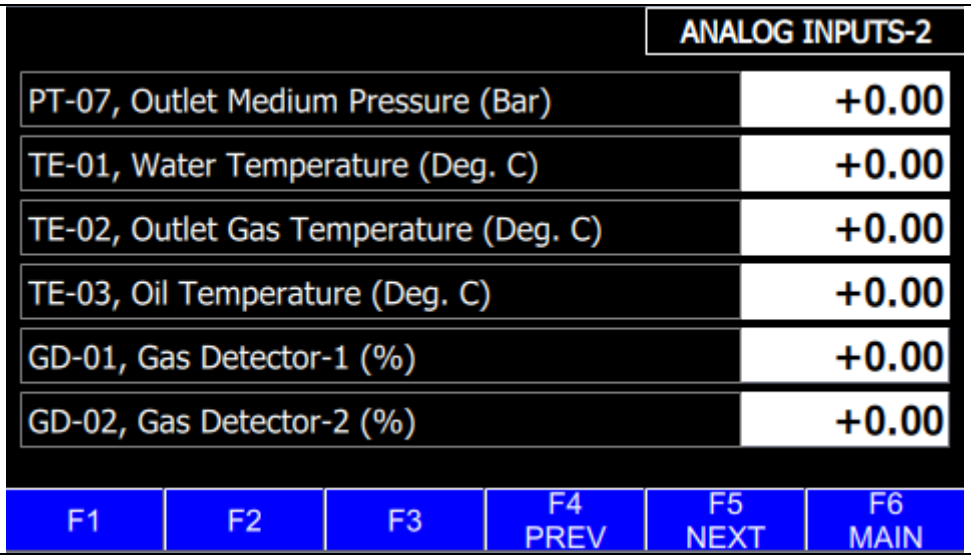
9. DIGITAL OUTPUT STATUS – 3

Screen Name: Digital Output -3 **Description:** Displays Digital Output Status. Status column shows current status of corresponding channel with color indication. **Operating:** F4- Previous Screen F5- Next Screen.	

10. ANALOG INPUT STATUS – 1

Screen Name: Analog Input Status-1 **Description:** Displays Process Value for Pressure, Temperature, Level and Differential transmitters Including Their Unit. **Operating:** F4- Previous Screen F5- Next Screen.	

11. ANALOG INPUT STATUS – 2

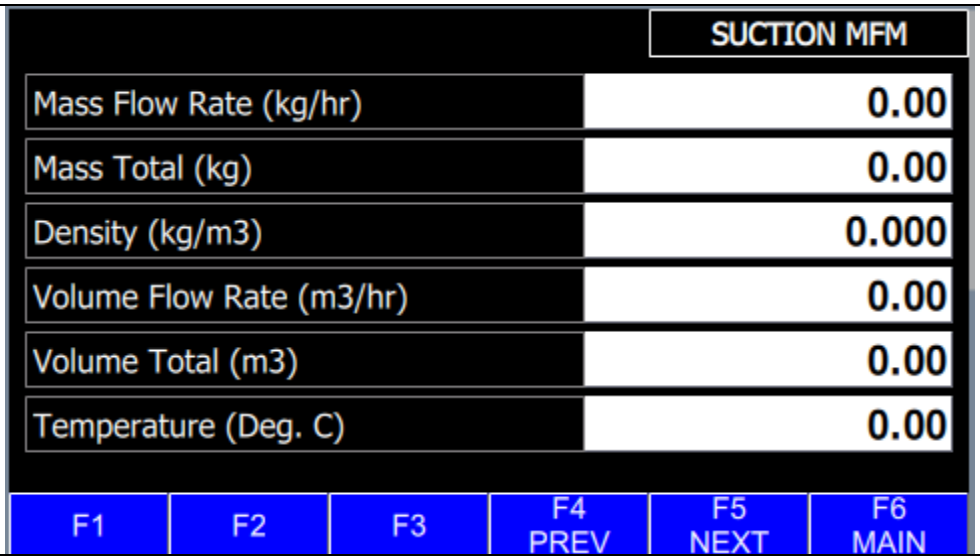
Screen Name: Analog Input Status-2 **Description:** Displays Process Value for Pressure, Temperature, Level and Differential transmitters Including Their Unit. **Operating:** F4- Previous Screen F5- Next Screen.	

12. SUCTION MASS FLOW METER DATA

Screen Name:
Suction MFM

Description:
Displays Current Mass Flow Rate, Mass Total, Density, etc.

Operating:
F4- Previous Screen
F5- Discharge MFM Data Screen.

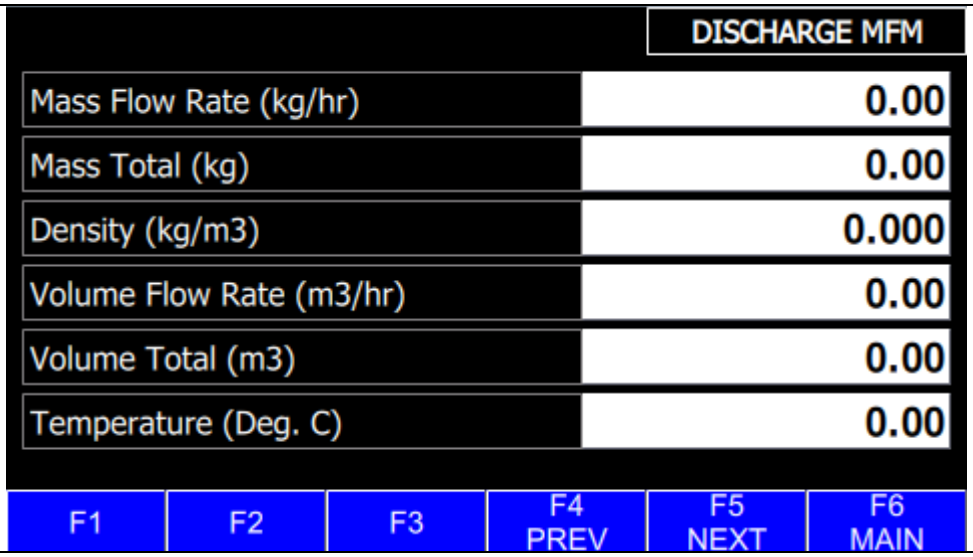


13. DISCHARGE MASS FLOW METER DATA

Screen Name:
Suction MFM

Description:
Displays Current Mass Flow Rate, Mass Total, Density, etc.

Operating:
F4- Suction MFM Data Screen

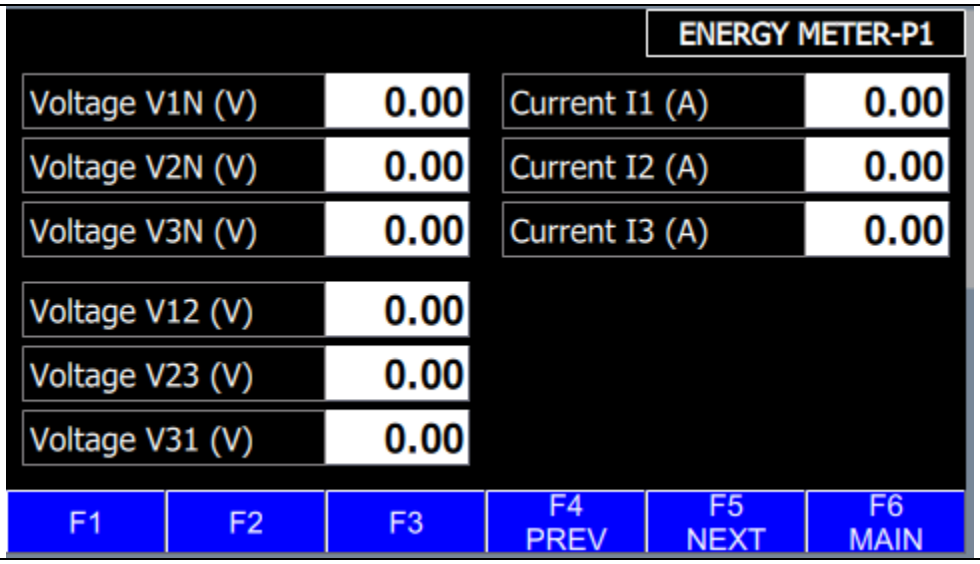


14. ENERGY METER DATA

Screen Name:
ENERGY METER-P1

Description:
Displays Current Line Voltage, Phase Voltage, Current to each Phase.

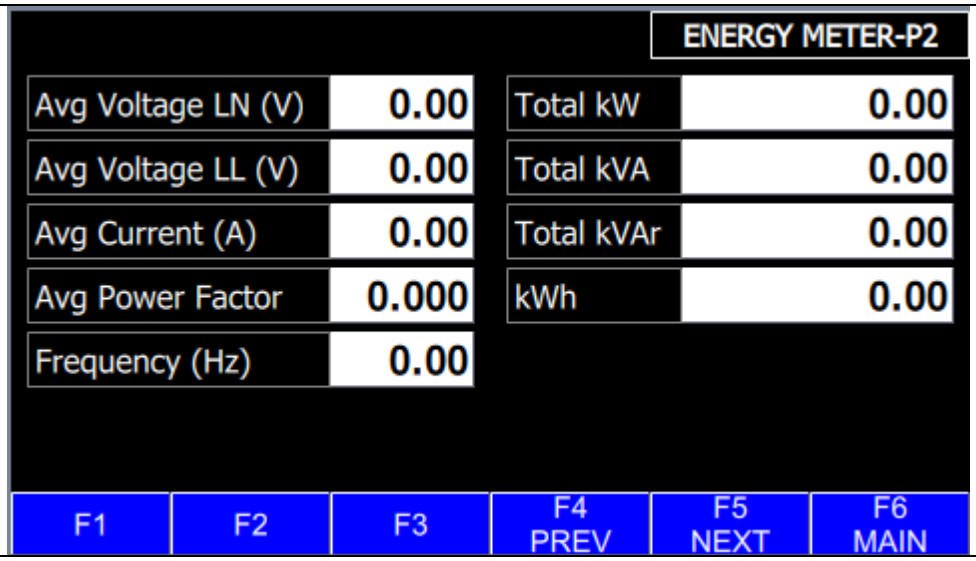
Operating:
F4- Previous Screen
F5- Next Screen.



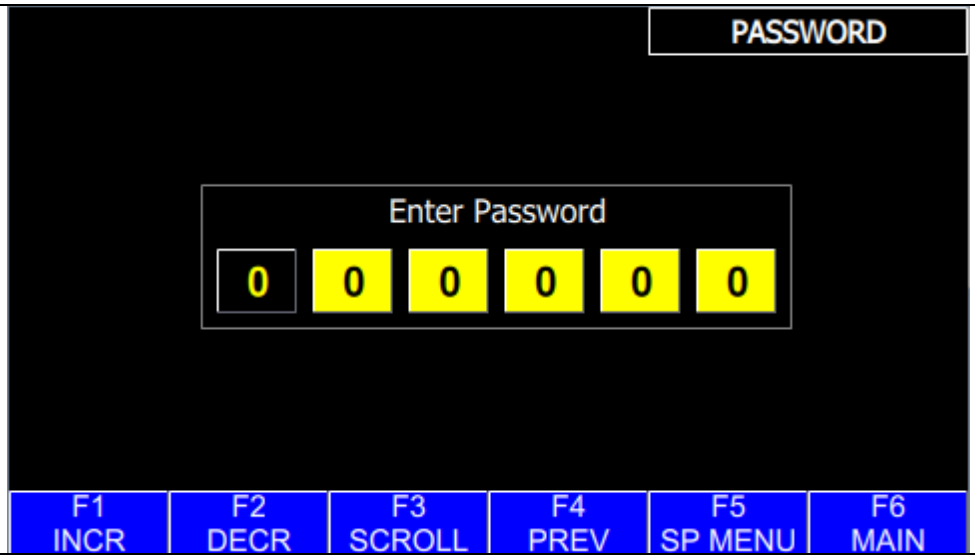
15. ENERGY METER DATA-2

Screen Name:
ENERGY METER-P2

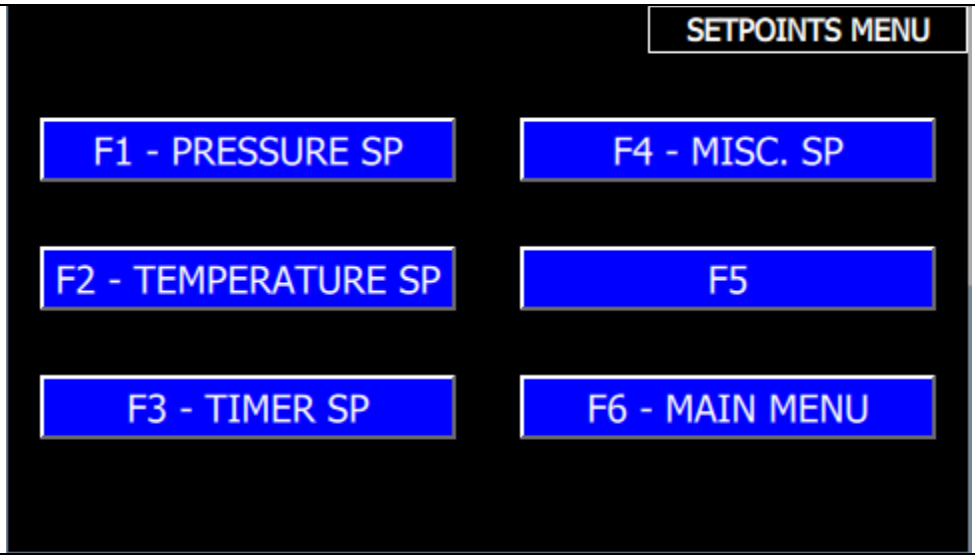
Description:
Displays Average Line Voltage, Average Phase Voltage,Average Current, Average PF, Frequency, Total kW, Total kVA, TOTAL kVAR, Total kWH.



16. PASSWORD

Screen Name: Password **Description:** Operator can change setpoints only after inserting correct password. **Operating:** To change Password use F1- For increment F2- For Decrement F3- ForScrolling Focus.	

17. SETPOINT MENU

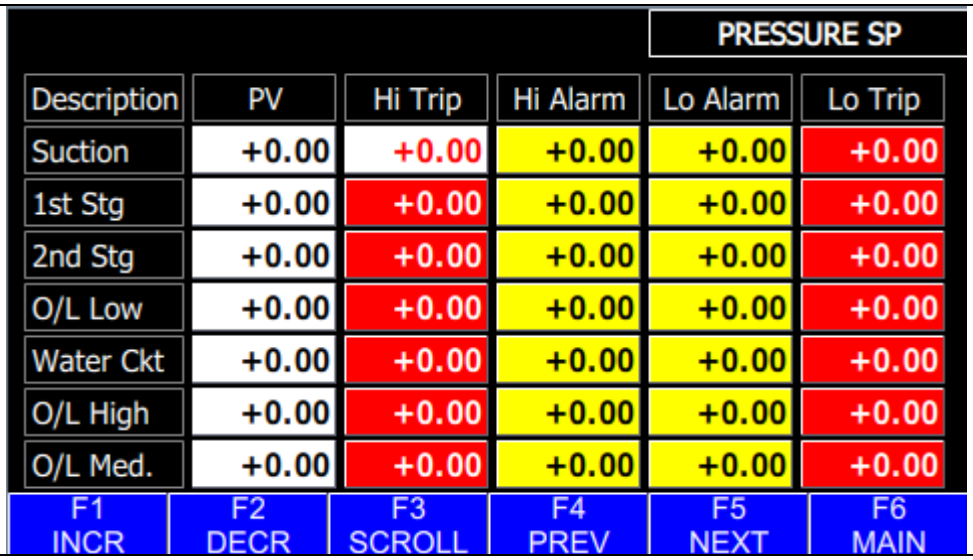
Screen Name: Setpoints Menu **Description:** Operation Menu to navigate to various screens. **Operating:** Click On Operator Button to navigate to Screen.	

18. PRESSURE SETPOINT

Screen Name:
Pressure SP

Description:
Operator can view Alarm & Trip setpoint for different Pressure .
Operator can only change it after entering correct password.

Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- ForScrolling Focus.

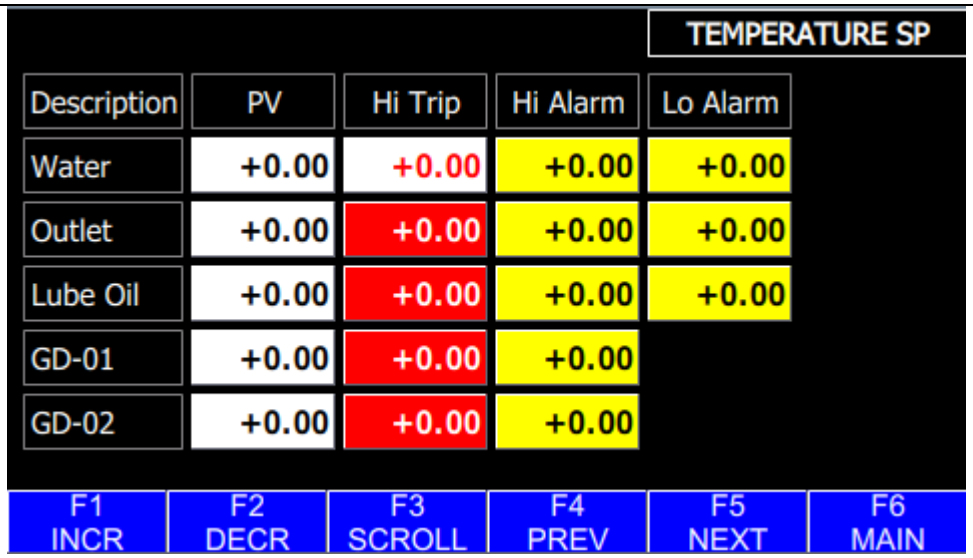


19. TEMPERATURE SETPOINT

Screen Name:
Temperature SP

Description:
Operator can view Alarm & Trip setpoint for different Temperature .
Operator can only change it after entering correct password.

Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- ForScrolling Focus.



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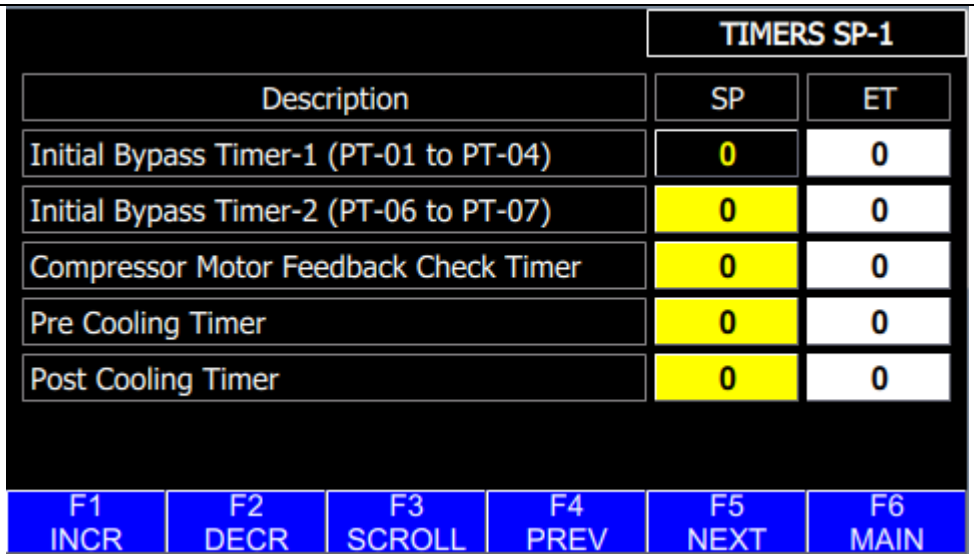
20. TIMER SETPOINT-1

Screen Name:
Timer SP-1

Description:
Operator can view Alarm & Trip setpoint for different Timers for PLC logic .
Operator can only change it after entering correct password.

Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- ForScrolling Focus
F5- Next Screen.

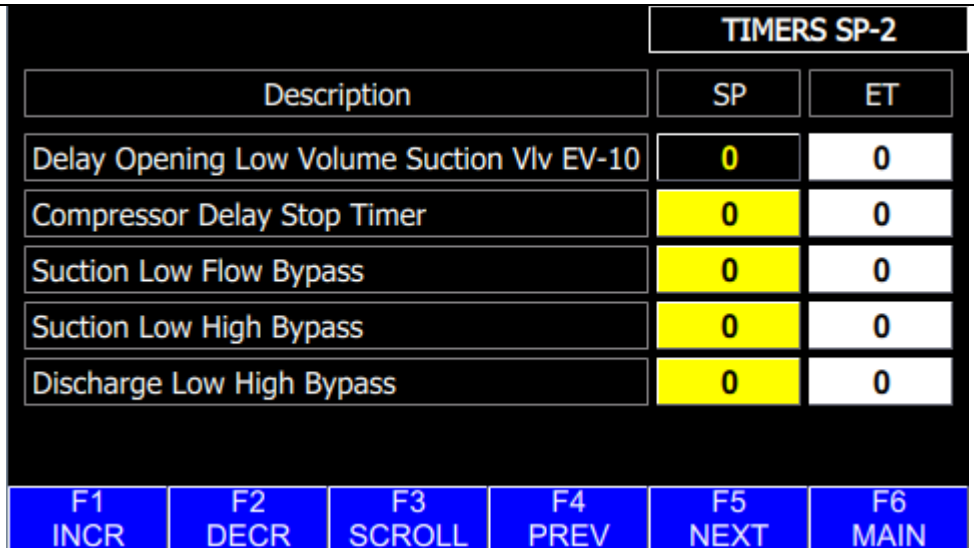


21. TIMER SETPOINT-2

Screen Name:
Timer SP-2

Description:
Operator can view Alarm & Trip setpoint for different Timers for PLC logic .
Operator can only change it after entering correct password.

Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- ForScrolling Focus
F4- Previous Screen.



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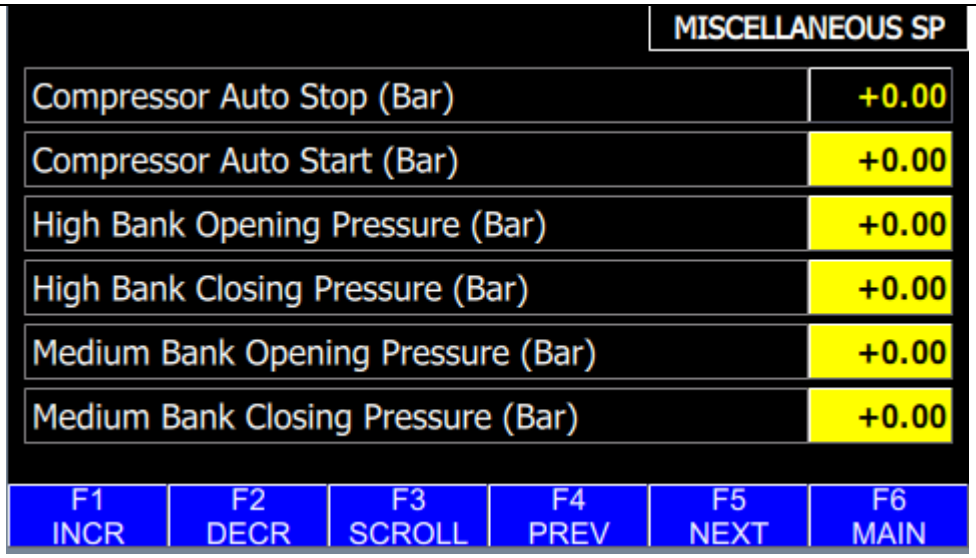
22. MISCELLANEOUS SEPOINTS-1

Screen Name:
Miscellaneous SP

Description:
Operator can view different Operationalsetpoint for PLC logic .
Operator can only change it after entering correct password.

Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- ForScrolling Focus
F5- Next Screen.

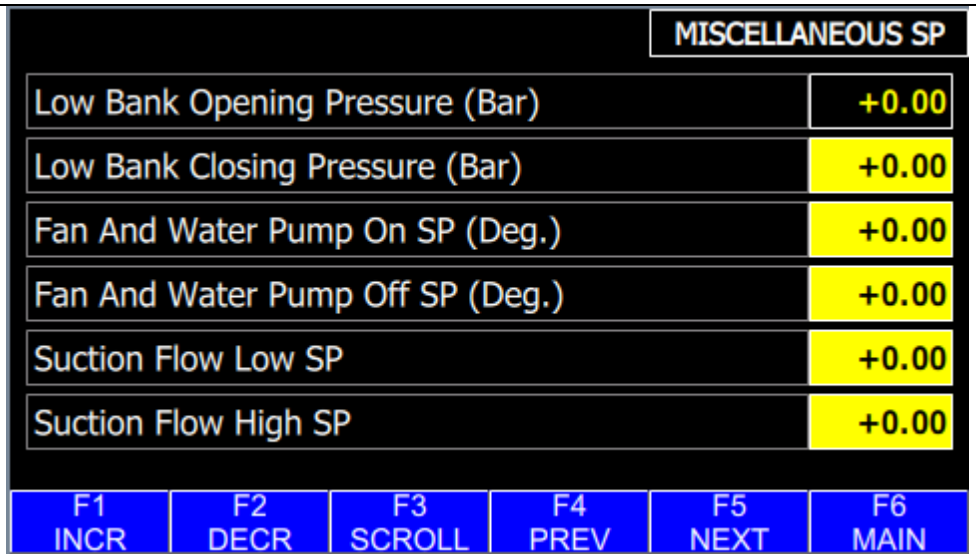


23. MISCELLANEOUS SEPOINTS-2

Screen Name:
Miscellaneous SP

Description:
Operator can view different Operational setpoint for PLC logic .
Operator can only change it after entering correct password.

Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- ForScrolling Focus
F4- Previous Screen
F5- Next Screen.



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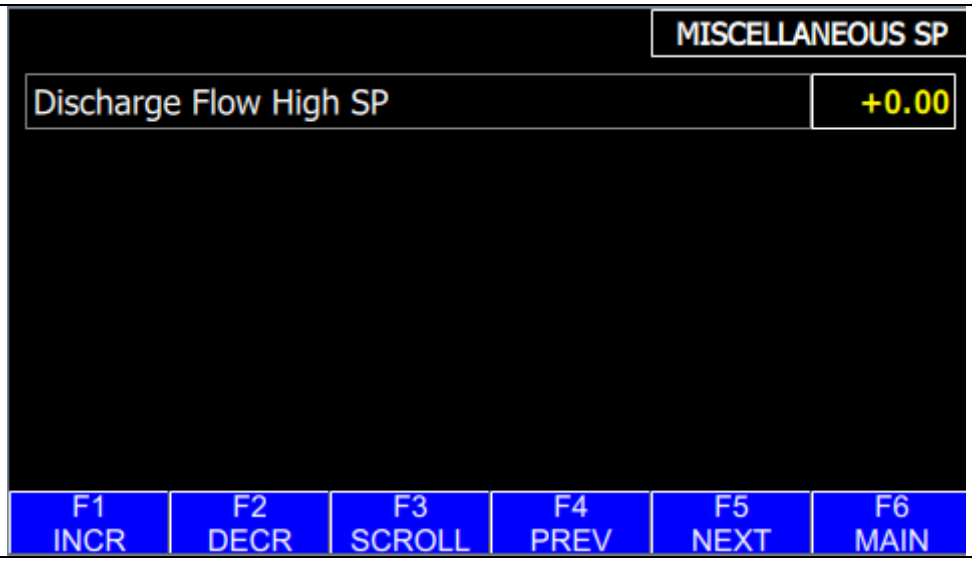
24. MISCELLANEOUS SEPOINTS-3

Screen Name:
Miscellaneous SP

Description:
Operator can view different Operational setpoint for PLC logic . Operator can only change it after entering correct password.

Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- ForScrolling Focus
F4- Previous Screen

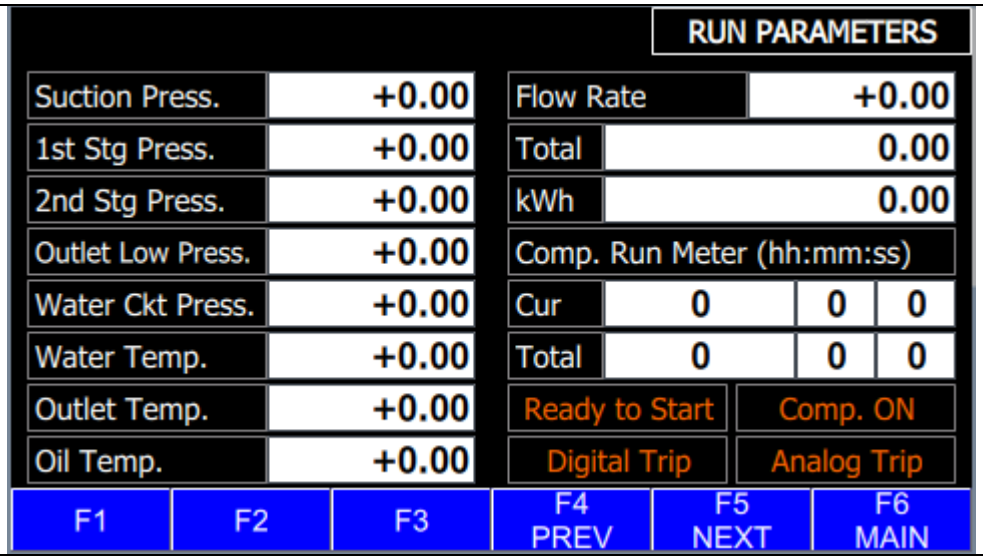


RUN DATA

Screen Name:
Run Data

Description:
Operator can view All analog values, Suction Flowrate, Suction Totalizer, kWH, Run Meter, Compressor Status for tripping interlocks.

Operating:
F5- Go to manual command screen



Digitally signed by Bivek Kumar Singh
Date: 2026.03.30 18:51:35 IST

25. PASSWORD-MANUAL

Screen Name:
Password-Manual

Description:
Operator can go to next screen and Control Outputs only after inserting correct password.

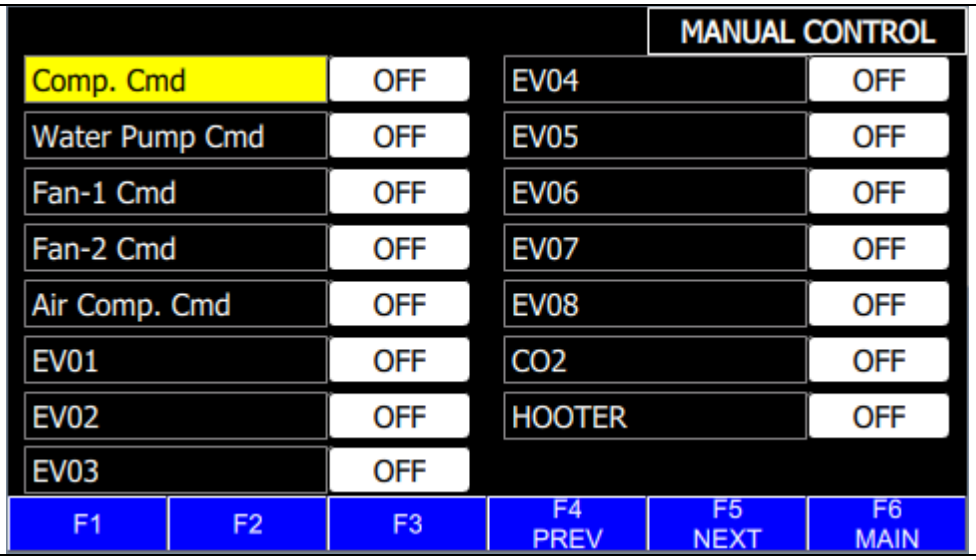
Operating:
To change Password use
F1- For increment
F2- For Decrement
F3- For Scrolling Focus.

26. MANUAL CONTROL

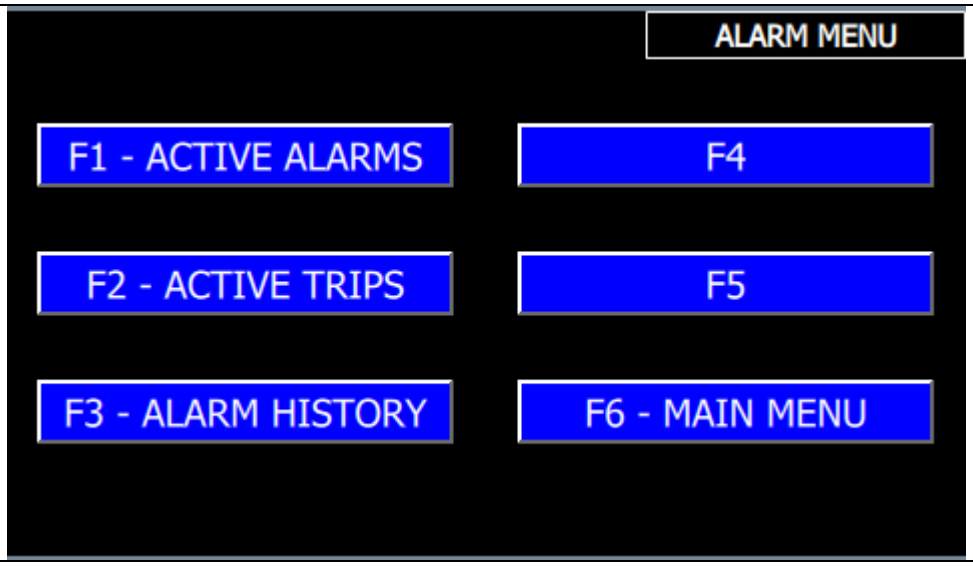
Screen Name:
Manual Control

Description:
Operator Can control outputs here.

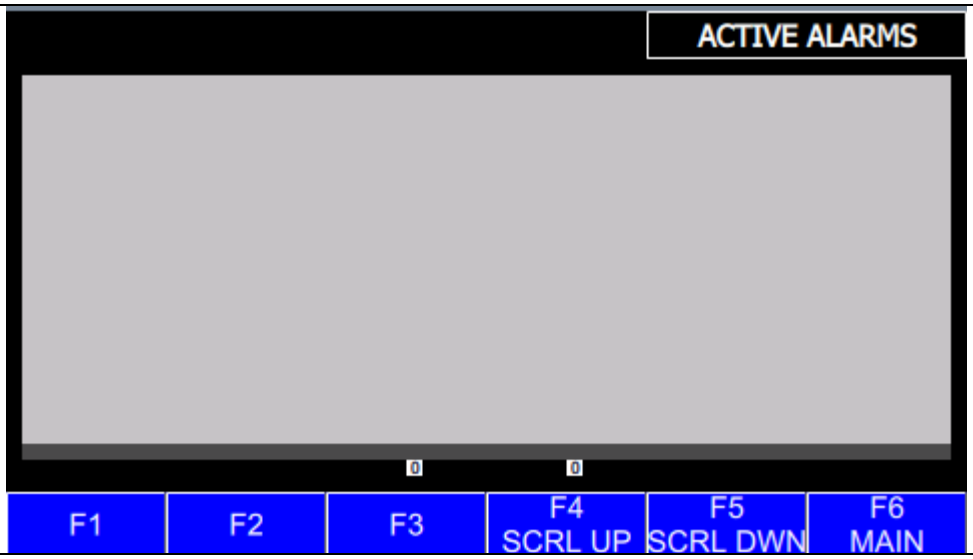
Operating:
To change Password use
F1- To On
F2- To Off
F3- For Next Command navigation.



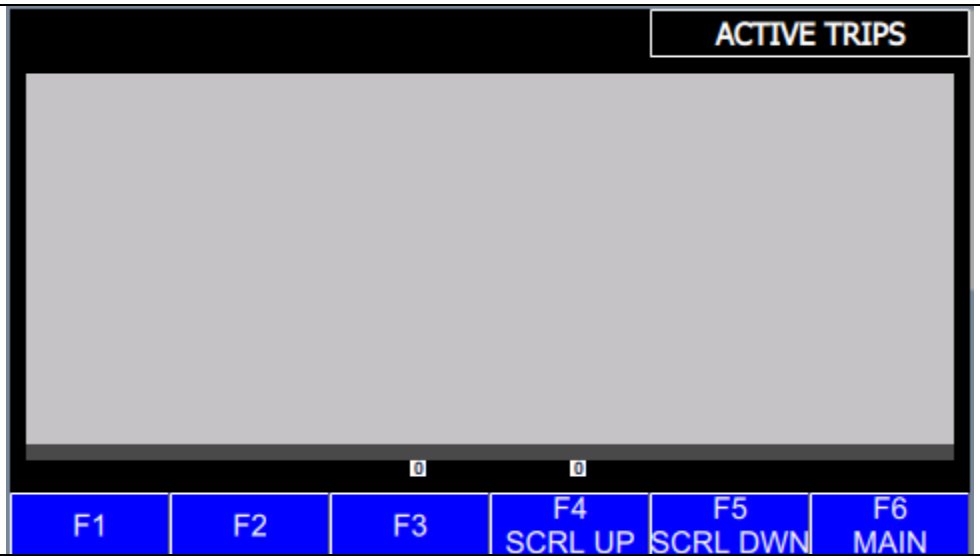
27. ALARM MENU

Screen Name: Alarm Menu **Description:** Operation Menu to navigate to various screens. **Operating:** Click On Operator Button to navigate to Screen.	

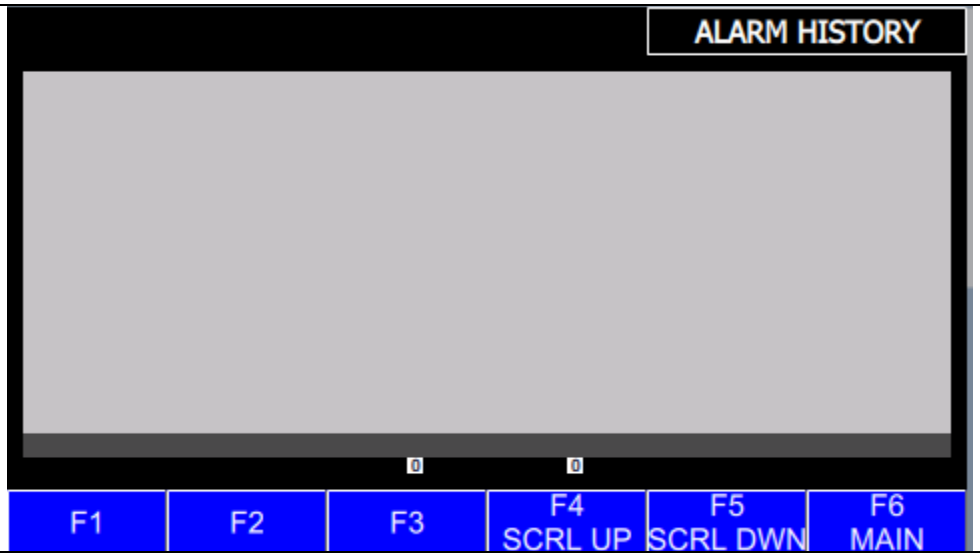
ACTIVE ALARM

Screen Name: Active Alarms **Description:** Operator can see Currently active alarms in this alarm window. **Operating:** F4- Scroll Up F5- Scroll Down	

28. ACTIVE TRIPS

Screen Name: Active Trips **Description:** Operator can see Currently active trips in this alarm window. **Operating:** F4- Scroll Up F5- Scroll Down	

29. ALARM HISTORY

Screen Name: Alarms History **Description:** Operator can see all alarms with date & time in this alarm window. **Operating:** F4- Scroll Up F5- Scroll Down	

O. Venting procedure

Compressor, in its normal operation, doesn't need to be vented because the pistons can be stopped, remaining under pressure, in any position of the stroke. This procedure is carried out only in case of maintenance.

To vent the compressor keep to the following procedure:

- close the gas shut-off valve on the suction; - close the gas shut-off valve on the delivery;
- slowly open the vent valve.

To recharge the compressor follow the procedure below:

- close the vent valve;
- slowly open the valve on gas suction;
- at pressure reached, open the shutoff valve on gas delivery.

P. Failure analysis

Type of failures and problems	What to verify	What to do
Electric motor doesn't spin	- if there's voltage on the network - oil level - gas suction pressure	- give voltage - add oil - supply suction with gas
Electric motor spins and compressor doesn't start	- if electric motor spins in the right way - if the joint pump-motor is dropped	- reverse the polarity of the connection cables - hang it up
Compressor does't reverse its course	The reversing valve	Act as described in the "Inversion group"
Abnormal noise at inversion	if the reversing valve inverts the pistons too quickly (usually 5-6 sec)	replace the reversing valve
Oil filter clogging indicator on red	If the oil filter is clogged	Replace filter cartridges

Gas filter clogging indicator on red	If suction gas strainer is clogged	Replace filter cartridges
Gas leaks from seals	That the seals are not damaged	If so replace and restore the good condition the coupling surfacesof the seals

Q. Control panel alarm analysis

If the compressor stops because of one of the safety blocks provided in the cabinet, proceed as follows:

Type of alarm displayed in the control cabinet	Cause	What to do
Maximum oil temperature	- reversing valve malfunction - lack of water in the circuit - clogging of the oil / water heat exchanger	- check the reversing valve operation and replace if necessary; - verify the water supply taps are open; - replace heat exchanger;
minimum oil level	oil level fallen below the set threshold	check the oil level and add oil until the light turns off
minimum suction pressure	pressure under set threshold	- check suction gas pressure - check if the pressure switch has gone short circuit
maximum discharge gas pressure on second stage	pressure above the predefined threshold (200-220 bar)	- verify delivery gas pressure - check if the pressure switch has gone short circuit

R. Warranty

Compressor is guaranteed twelve months from the date of delivery or for 2000 hours of working, against any defect or flaw of any kind or entity. If it will be found to be defective or broken during this period, the manufacturer guarantees to replace or repair the defective part shall leaving the labor charged to the customer. The guarantee is not valid in the following cases:

1. If the machine has been used in an inappropriate, improper or negligent manner, or it has been repaired or modified in such a way as to compromise the safety of operation.

2. All the procedures planned and described in this manual haven't been carried out.

3. If the machine is used in conditions other than those specified in the manual.

4. Remain excluded all faults due to negligence, abnormal use of the machine, the parts subject to wear and spare tampered with or used incorrectly.

S. Maintenance

General information:

- The machine must be maintained in correct and safety conditions.
- The controls must do in accordance with constructor advices
- It's necessary use original spare parts and don't modify the machine.

For all components in contact with gas you must follow these advices:

- Before disassemble the machine parts wait at list 15 minutes from stop of compressor
- Check if the pressure on every stage is 0.

INSPECTION OF MACHINE

Daily inspections

- Gas pressure in Stage-1& 2
- Gas leakage
- Oil level
- Water level
- Abnormal sound

Monthly inspections

- Check possible leakage from fittings
- Check the efficiency of emergency system
- Check all bolts.
- Check the rotation of all motors
- Check the coupling of Main Motor & Water Pump

Annual inspections

- Check instruments settings
- Check if Pressure Gauge and transducer read the same pressure
- Check the Working of CO2, GD & FD
- Check the stop process sequence

Hourly Maintenance Schedule

1. Daily Check List:-

S. No.	Type of Check	Status	Remarks
1	Gas leakage.		
2	Oil leakage		
3	Water Level in Tank. (min 50%)		
4	Gas pressure –Stage1 & 2		
5	Any Abnormal Sound.		
6	Rotation of Motor & Fan (Clock wise Direction)		
7	Airline Pressure (min 6 Bar)		
8	Alarm in HMI		

2. Monthly Preventive Maintenance Check List:-

BOOSTER COMPRESSOR (22 & 37 kw)		
S.No.	DETAILS OF OPERATION /TASK LIST	REMARKS
1	FUNCTIONING OF PLC AND DISPLAY	
2	TOTAL RUNNING HOURS OF BOOSTER COMPRESSOR	
3	INCOMING VOLTAGE SUPPLY	
4	CURRENTLY KWH OF BOOSTER COMPRESSOR POWER METER	
5	AMPERE OF BOOSTER COMPRESSOR	
6	KWH OF BOOSTER COMPRESSOR	
7	COMPRESSOR MASS FLOWMETER READING	
8	CHECK OIL PRESSURE OF BOOSTER COMPRESSOR	
9	EMERGENCY SWITCH CHECK	
10	CHECK TIGHTNESS OF ELECTRICAL CONNECTION	
11	CHECK TIGHTNESS OF ALL FITTING AND JOINTS CONNECTION	
12	CHECK WATER COOLER AND PUMP	
13	CHECK THE STAUS OF RETURN LINE OIL FILTER	
14	CHECK TEMPRATURE OF WATERCOOLER	
15	CHECK OIL & WATER LEVEL	
16	CHECK GAS, OIL & WATER LEAKAGE	
17	HOUSEKIPPING OF BOOSTER COMPRESSOR	
18	CHECK WORKING CONDITION OF PRIORITY PANEL	
19	CHECK ACTUATOR OPRERATION OF LP/MP/HP	
20	CHECK THE SUPPLY OF GD/FD	
21	CHECK THE PRESSURE AND WEIGHT OF CO2	

3. Yearly Check List:-

BOOSTER COMPRESSOR (22 & 37 kw)			
S. No	**Check List**	**Status**	**Remark**
1	WATER QUALITY & CONTAMINATION		
2	OIL LEVEL READING (Mounted on Tank)		
3	FINCTION OF PT (SUCTION & Discharge)		
4	HYDROLIC OIL QUALITY (It Should not be blackish)		
5	PRESSURE GAUGE READING CROSS VERIFY TO HMI		
6	PT READING CROSS VERIFY TO HMI		
7	RETURN LINE PRESSURE GAUGE READING		
8	TO CHECK ANY LOOSE CONNECTION IN FITTING (electrical & Mechanical)		
9	TO CHECK THE OIL LEAKAGE		
10	TO CHECK THE WATER LEAKAGE		
11	TEMP. OF RADIATOR WATER		
12	OILING (PUMP & MOTOR)		
13	FUNCTION OF WATER PUMP AND MOTOR		
14	WORKING OF GD/FD		
15	Add+ ALL OTHER PARAMETERS OF MONTHLY MAINTENANCE		

Maintenance Schedule - Air Compressor

Air Compressor:		
S. No	**Maintenance Plan**	**Schedule**
1	**Replace the Air Compressor Oil**	Once in year
2	**Check the setting of Air Compressor Pressure Switch**	Once in 3 month
3	**Check the condition of Air Compressor Belt**	Once in 3 month
4	**Check any leakage from Fittings**	Once in 3 month
5	**Drain Water from the Air Receiver of Air Comp.**	Once in Week
6	**Check for any Abnormal Sound. Rectify if found any**	Once in month

TABLE OF SCHEDULED MAINTENANCE- HOURLY MAINTENANCE

PART	OPERATING HOURS					
	1000	2000	4000	6000	8000	10000
Gas filter	Check	Replace	Replace	Replace	Replace	Replace
Oil filter	Check	Check/ Replace	Replace	Check/ Replace	Replace	Check/ Replace
Hydraulic Oil	Check	Check/ Replace	Replace	Check/ Replace	Replace	Check/ Replace
Piston seals		Check/ Replace	Check/ Replace	Check/ Replace	Check/ Replace	Check/ Replace
Rod seals		Check/ Replace	Check/ Replace	Check/ Replace	Check/ Replace	Check/ Replace
Piston guide rings		Check/ Replace	Check/ Replace	Check/ Replace	Check/ Replace	Check/ Replace
Rod guide rings			Check/ Replace	Check/ Replace	Check/ Replace	Check/ Replace
Oil deliver hose	Check	Check/ Replace	Check/ Replace	Replace	Check/ Replace	Check/ Replace
Intensifier NRV Block		Check	Check	Check	Replace	Check
Direction & Reversal Valve Setting		Check	Check	Check	Check	Check
Function of Oil Level Switch		Check	Check	Check	Check	Check
Radiator Cleaning		Check	Check	Check	Check	Check
Heat exchanger Cleaning			Check		Check	
Tighten all the Electrical connection		Check	Check	Check	Check	Check
Cleaning of Contactors, Overload Relay, MCB,MCCB		Check		Check		Check
Voltage & Current of Motors		Check	Check	Check	Check	Check
Fictional test of all ESD	Check	Check	Check	Check	Check	Check
Fictional test of GD, FD		Check	Check	Check	Check	Check
Fictional test of CO2		Check	Check	Check	Check	Check

T. Compressor parts description

Ref	DESIGNATION
1	1st STAGE GAS COMPRESSION CYLINDER
2	2nd STAGE GAS COMPRESSION CYLINDER
3	1st STAGE GAS SUCTION PRESSURE GAUGE
4	1st STAGE GAS DISCHARGE PRESSURE GAUGE
5	2nd STAGE GAS DISCHARGE PRESSURE GAUGE
6	OIL CHARGE CAP
7	OIL TANK
8	OIL DRAIN TAP
9	OIL LEVEL INDICATOR
10	OIL THERMOSTAT
11	GAS / WATER HEAT EXCHANGER
12	EXPLOSION PROOF ELECTRIC MOTOR
13	2 CONTACTS BY-PASS AND MINIMUM PRESSURE SWICTH
14	PUMP
15	LANTERN
16	OIL FILTER CLOGGING INDICATOR
17	OIL FILTER
18	OIL-WATER HEAT EXCHANGER
19	1st STAGE CYLINDER BY-PASS TAPS
20	GAS FILTER
21	GAS FILTER CLOGGING INDICATOR
22	HOSES
23	ELECTRIC LEVEL INDICATOR SAFETY OIL

H. Safety

CNG DO'S

1) Always use suitable Personal Protective Equipments (PPEs') at station.
2) Ensure that hourly reading is entered in the Log-sheet, on daily basis.
3) Oil-records must be maintained properly.
4) Always ensure proper house-keeping at station.
5) In case of Gas Leakage or any Alarm, Stop the Compressor. Contact on the Emergency number and inform the concerned Engineer.
6) On gas leakage, immediately close/isolate Suction and Discharge valve of the Compressor and Open the doors.
7) In case of any fire / explosion accident, evacuate the site & be in the upwind or cross wind direction.
8) In case of any emergency, immediately contact on the Emergency Number and inform the concerned Engineer.
9) Ensure that only authorized person enters the compressor area.
10) Always use proper tools & tackles for any operation & maintenance.
11) Always follow guidelines of OEM / Statutory norms all the time;
12) Use DCP Fire extinguishers for extinguishing the gas fire. Ensure that they are cleaned on regular basis and located properly.
13) Report Near Miss/Hazards on Emergency Number and maintain its record.
14) Ensure that all the Sign Boards like DO NOT SMOKE, NO OPEN FLAME, SWITCH OFF YOUR PHONE, etc. are properly mounted.

CNG DONT'S

1) Do not introduce any Open Flame in the CNG (Compressor/Dispenser) Area.
2) Do not disturb/reset any installation/alarm at own.
3) Do not use Ammonia based soap for leak checking, as it will cause corrosion to the stainless steel parts.
4) Do not store any other combustible material except for CNG within compressor area.
5) Do not tamper any Label/Tag without permission.
6) Do not carry any HOT work on CNG components without permission.
7) In case of any leakage, malfunction or damage do not start the compressor.
8) Do not over tighten any fittings / gadgets.
9) Never allow problem to go unreported / unattended.
10) Do not tighten any fitting under pressurized condition.
11) Do not keep electrical power supply "ON", while compressor is under maintenance.
12) Do not charge in excess of maximum allowable working pressure at normal temperature for the cylinder.