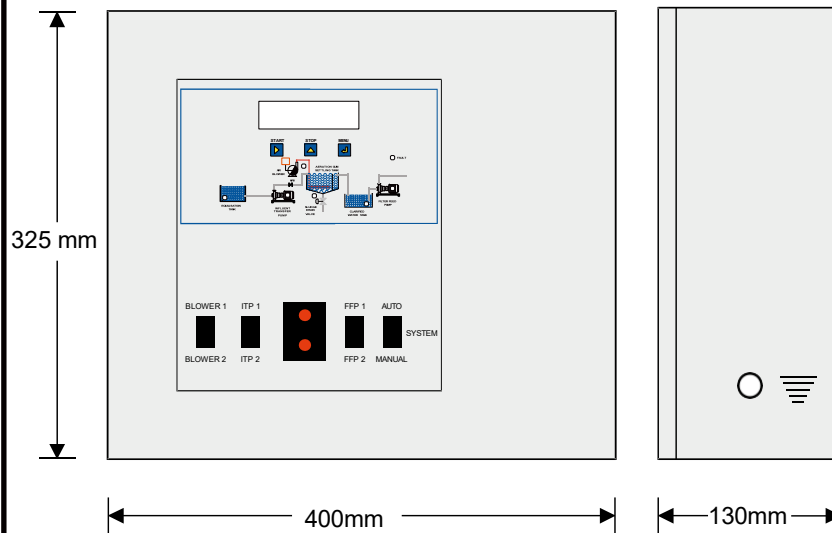


ASTERO ETP/STP CONTROL PANEL (16 X 2 LCD DISPLAY)



Overall size: 400 mm(Horizontal) X 325 mm(Vertical) X 130 mm (depth)

ETP 333 PANEL (1W+1S)

FACTORY SETTINGS	STANDARD	CHANGES
OVERLOAD CURRENT	ITP: 4.0Amps ☐ FFP: 4.0Amps ☐ BLOWER : 4.0Amps ☐	
DRY RUN CONTROL	OFF	
MAXIMUM HP	ITP: 5 hp 3 P ☐ FFP: 5 hp 3 P ☐ BLOWER : 5 hp 3 P ☐	
CHANGES MADE TO TERMINAL, IF ANY		
MOV	320V, D14mm	
FUSE	1.5 A	

Automation Philosophy:

The Astero microprocessor based panels are ideally suited for the plants where automatic pump control is required as they have the complete operating logic of the process pre-programmed. The panels basically can take 4 inputs from the level switches and controls the two pumps, blower & drain valve. The advanced electronics also takes care of the required motor protection such as **over load, dry running, and single phasing.**

Operating Logic:

Upon switching ON power supply of the panel, the processor will start the air blower & check for equalisation tank level input. If the input is ON (open), then influent transfer pump will start & if clarified water tank level is ON (open) filter feed pump will start. After set service time (running of Air blower) sludge drain valve/pump will open/start for the set time.

OPERATION OF THE PANEL:

Starting Sequence: After switching ON power supply of the panel, it checks for the following inputs.

1. If equalisation tank level OK then influent transfer pump will start.
2. If clarified water tank level is OK then filter feed pump will start.

Stopping Sequence: Under following conditions processor will stop its operation

1. If stop key is pressed
2. If tank is empty (short).

If any one of the above condition occurs, then

- Pump stops
- STATUS is displayed on MIMIC

Trip sequence: Under following conditions processor will trip, at that time press start to resume operation.

1. Dry Run,
2. Single phase
3. Overload.

Instructions for Setting the Panel: Use the following keys for setting the panel as per given instructions.

▶ **START:** This key is used to start the operation and move the cursor forward (during settings).

▲ **STOP:** This key is used to end the operation and increase the value (during settings).

↵ **MENU:** This key is used to go to next step (**Enter**).

Terminal connections :

B	Y	R	B	Y	R	B	Y	R	B	Y	R	B	Y	R	B	Y	R	N	B	Y	R		
SLUDGE DRAIN PUMP			AIR BLOWER 2			AIR BLOWER 1			FFP 2			FFP 1			ITP 2			ITP 1			INPUT		
			INCOMING WIRE SHOULD BE OF 2.5 sqmm																				

NC	C	NC	C	NC	C	NO	C	N.A.	R	G	B	N	P	N	P
EQUILISATION TANK LEVEL		CLARIFIED TANK LEVEL		SETTLING TANK LOW LEVEL		REMOTE FAULT		X		FLOW SENSOR		SLUDGE DRAIN VALVE		DOSER	

Terminal	Description	Connections
ITP	Influent Transfer Pump	R Y B or P Phase N Neutral
FFP	Filter Feed Pump	R Y B or P Phase N Neutral
AB	Air Blower	R Y B
SDP	Sludge Drain Pump	R Y B
DRAIN VLV*	Sludge Drain Valve	P Phase N Neutral
DOSER	Dosing Pump (I/L with ITP)	P Phase N Neutral
EQL LVL	Equilisation tank low level	C- Common NC Normally Closed
CLF LVL	Clarified water tank low level	C- Common NC Normally Closed
SETTLING LVL	Settling tank low level	C- Common NC Normally Closed
REMOTE FAULT	Spare input	C- Common NO Normally Open
FLOW SENSOR	Flow Sensor input	R-Red,G-Green,B-Black

* Solenoid valve for sludge drain should be **230 V A.C. Coil & Normally Closed** type

TO VIEW THE FACTORY SETTINGS

Key Pressed	Display
MENU	VIEW?
Display scrolls through all the settings set by factory.	
MENU	EQL LVL IP : ON
	CLW LVL IP : ON
	ST LO IP : ON
	REMOT TRIP : ON
	SETTINGS?

TO SET OVERLOAD CURRENTS(SEC--1.1)

Why to set overload current?

When the motor draws more current than the normal running current then it is said to be an overload current which is an abnormal condition which leads to motor burns or failures. To take care of it we set overload currents, the panel trips when the current drawn by the motor is more than the overload current set by us (which should be 20% more than actual normal running current)

How to know normal(actual) running motor current?

There are two methods (1)With the Clamp Meter check the output currents of individual phases(R/Y/B).(2) Using our control panel Refer section 1.7

MENU	ITP OVL CRT?
MENU	ITP OVL CRT?04.0
USE STOP AND START KEY TO SET DESIRED VALUE	

MENU	FFP OVL CRT?
MENU	FFP OVL CRT?04.0
USE STOP AND START KEY TO SET DESIRED VALUE	
MENU	BLR OVL CRT?
MENU	BLR OVL CRT?04.0
USE STOP AND START KEY TO SET DESIRED VALUE	
MENU	EXIT?
MENU	SCROLL?
MENU	SCROLL? OFF
Switch it ON with STOP key if auto scrolling is required.	
TO SET DRY RUN CURRENTS(SEC--1.2)	
Why to set Dry Run current? If the pump is running without any water, is termed as motor dry running and current drawn by the motor is lesser than the normal running current. The controller avoids the dry running of motor by tripping the respective pump. Dry running can lead to pump failures and therefore there is a need to trip motor in such a condition. How to know dry running motor current? Run the motor without any load and check the phase currents with Clamp meter. The set point must be kept between normal running current and actual dry running current.	
START & STOP SIMULTANEOUSLY	PASSWORD:000
ENTER PASSWORD 123 WITH START & STOP KEY	
MENU	PHASE UNBAL :
	PHASE UNBAL :40
USE STOP AND START KEY TO SET DESIRED VALUE This is the percentage value of unbalance between two phase currents.If unbalance increases beyond this limit processor will trip respective pump or blowerwith SINGLE PHASING.	
MENU	DRY RUN OPRN:
MENU	DRY RUN OPRN:OFF
USE STOP KEY TO MAKE IT ON	
MENU	ITP DRY CRT?
MENU	ITP DRY CRT?01.5
USE STOP AND START KEY TO SET DESIRED VALUE BELOW WHICH THE PUMP MUST TRIP	
MENU	FFP DRY CRT?
MENU	FFP DRY CRT?01.5
MENU	BLR DRY CRT?
MENU	BLR DRY CRT?01.5
USE STOP AND START KEY TO SET DESIRED VALUE BELOW WHICH THE PUMP MUST TRIP	
MENU	AUTO RESTART?
MENU	AUTO RESTART? OFF
What is AUTO RESTART ? Once the pump go dry running and if Auto Restart is ON then the motor starts automatically after set time is elapsed else we have to start the motors manually.	
USE STOP KEY TO MAKE IT ON	
MENU	TIME : 015 m
MENU	EXIT?
MENU	

TO CONFIGURE INPUTS (SEC--1.3)	
Panel has 4 switch inputs. These inputs can be enabled/disabled in this routine.	
START & STOP SIMUTANEOUSLY	PASSWORD:000
ENTER PASSWORD 678 WITH START & STOP KEY	
MENU	FLOW SENSORS:
MENU	NO OF SENSORS:OFF
MENU	NO OF SENSORS:1
Make it 0 if Flow sensor is not connected	
MENU	SENSOR CONST
MENU	SENSOR CONST: Previously set value
Put the factor written on Flow sensor with START & STOP key	
MENU	QUIT ?
MENU	EQL LVL IP:
MENU	EQL LVL IP:ON
USE STOP KEY TO MAKE IT OFF (only if level interlock needs to be bypassed)	
MENU	CLW LVL IP:
MENU	CLW LVL IP:ON
USE STOP KEY TO MAKE IT OFF (only if level interlock needs to be bypassed)	
MENU	ST LO IP:
MENU	ST LO IP:ON
USE STOP KEY TO MAKE IT OFF (only if level interlock needs to be bypassed)	
MENU	REMOT TRIP:
MENU	REMOT TRIP:ON
USE STOP KEY TO MAKE IT OFF (only if interlock needs to be bypassed)	
MENU	EXIT?
MENU	
TO CONFIGURE OUTPUT (SEC--1.4)	
START & STOP SIMUTANEOUSLY	PASSWORD:000
ENTER PASSWORD 191 WITH START & STOP KEY	
MENU	MP TYPE :1-1
USE STOP KEY TO MAKE IT 1-1/3-3 (as per panel configuration)	
MENU	BLOWER : 3 PH
USE STOP KEY TO MAKE IT 1 PH(as per blower configuration)	
MENU	EXIT?
MENU	
CURRENT CHECKING (SEC--1.5)	
What is CURRENT CHECKING feature?	
If you want to check normal running currents of motor use this feature.	
START & STOP SIMUTANEOUSLY	PASSWORD:000
ENTER PASSWORD 456 WITH START & STOP KEY	
MENU	SELECT PUMP
START	ITP
USE STOP KEY TO SELECT FFP/BLR FOR WHICH YOU ARE GOING TO CHECK THE CURRENT.	
MENU	PLANT STATUS
BLOWER ON/OFF & SLUDGE DRAIN TIME SETTING (SEC--1.6)	
Using this feature a DRAIN VALVE can be opened after a set time for particular time.	
START & STOP SIMULTANEOUSLY	PASSWORD:000
ENTER PASSWORD 345 WITH START & STOP KEY	

MENU	BLOWER ON TIME
MENU	BLOWER ON TIME : 010
USE START & STOP KEY TO SET REQUIRED TIMING. THIS IS THE TIME (IN MINUTES) FOR WHICH BLOWER WILL ON.	
MENU	BLOWER OFF TIME
MENU	BLOWER OFF TIME : 010
USE START & STOP KEY TO SET REQUIRED TIMING. THIS IS THE TIME (IN MINUTES) FOR WHICH BLOWER WILL OFF.	
MENU	DUMP SERV TIME
MENU	DUMP SERV TIME : 010
USE START & STOP KEY TO SET REQUIRED TIMING. THIS IS THE TIME (IN MINUTES) AFTER WHICH SLUDGE DRAIN VALVE WILL OPEN.	
MENU	DUMPING TIME
MENU	DUMPING TIME : 015
USE START & STOP KEY TO SET REQUIRED TIMING. DRAIN VALVE WILL OPEN FOR THIS MUCH TIME (IN SECONDS)	
MENU	EXIT ?
NOTE:FOR ALL SETTING PROCEDURES In each setting routine , the changes made are finally stored only when the menu key is pressed once after the display shows EXIT/QUIT.	

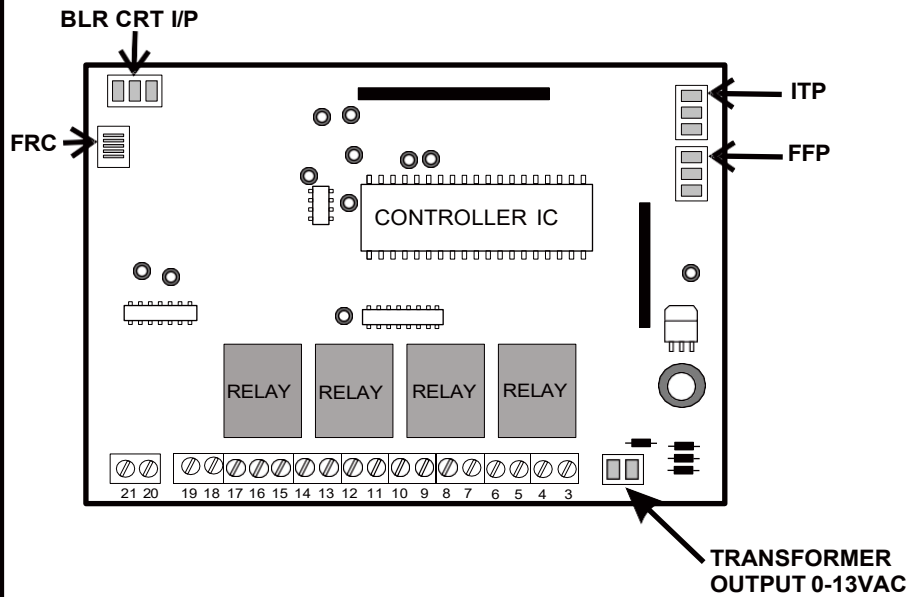
TROUBLESHOOTING :

LED Blinking	Message ON Display	Cause & Action
ITP/BLR/FFP	ITP/BLR/FFP OVERLOAD	● More current than the normal ratings. Set Overload current accordingly.
		● Motor is drawing more current than normal. Check Motor
	ITP/BLR/FFP SINGLE PHASING	● If there is mismatch between the R-Y-B phase currents drawn by the pump.
		● Check the connections.
	ITP/BLR/FFP DRY RUNNING	● Increase the phase unbalance value.
		● If current drawn by the pump is less than the set value. If tank is empty. Set currents as given in instructions section. Refer:section1.2

QUICK REFERENCE

Sr. No	Password	Feature	Section	Page No
1	123	Dry run current setting	1.2	5
2	—	Overload Current Setting	1.1	4
3	678	Input Configuration	1.3	6
4	191	Output Configuration	1.4	6
5	456	Current Checking	1.5	6
6	345	Drain time setting	1.6	6

CONNECTIONS ON PCB



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