Industry 4.O & Data Analytics for Paint Shops

About Us:

An 8-year-old organization with strong & Experienced team of Instrumentation, Software, Process & Thermal Engineers to provide state of the art product and services in the areas of,

- **Automation**
- **IIoT or Industry 4.O or e-Factory system**
- **Process Plant Design & Supply**

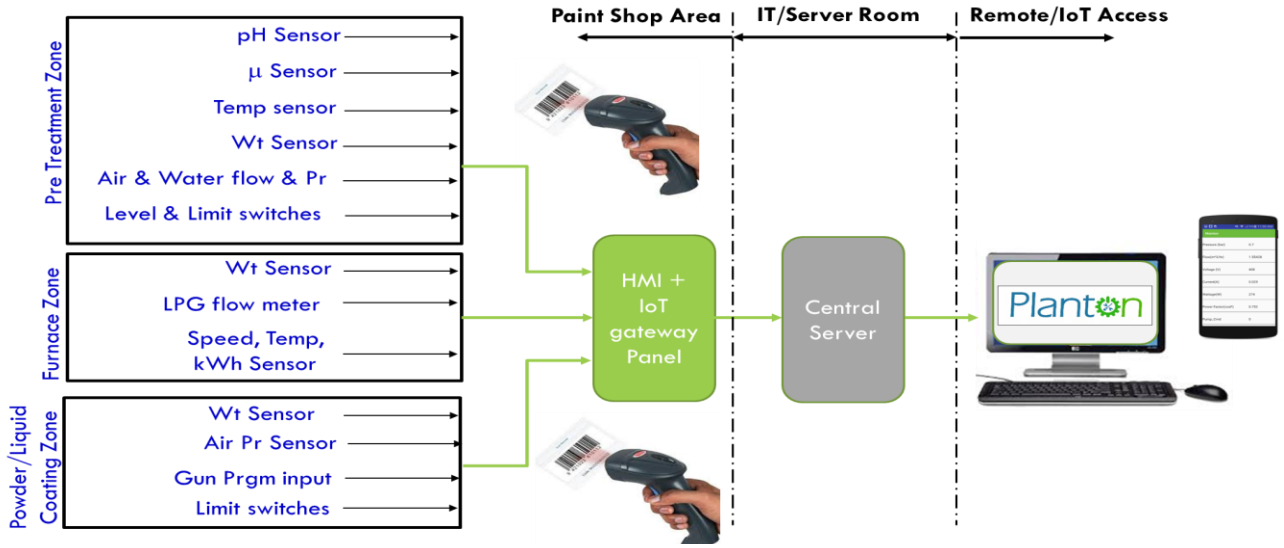
With the objective to help customers to improve Productivity, Efficiency, Quality & Safety of equipment's or Plants.

We are well versed to deal with both Greenfield and Brownfield requirements to provide turnkey and/or customized solutions.

Needs to Know Critical Parameters: - On-The-Go

Sr No	Parameters	Pre-Treatment	Painting	Baking Oven
1	**Quality**	pH, µ, Temp, Dip Time	Air Pr, Gun Program	Temp of Oven and FG, Conveyer Speed
2	**Sp. Utility Consumption**	Water/Mtl Processed (m3/Kg) Air/Mtl Processed (m3/Kg)	Air/Mtl Processed (m3/Kg) Energy/Mtl Processed (kWh/Kg)	Energy/Mtl Processed (kWh/Kg)
3	**Productivity**	% Loading (OEE) Time Between Loading		% Loading

IoT For Paint Shops:-



Contact Us: **Instron Technologies Office No. 8 Plot No 165/1/, T Block, Priyadarshani Industry Society, MIDC, Bhosari, Pune, Maharashtra India-411026**

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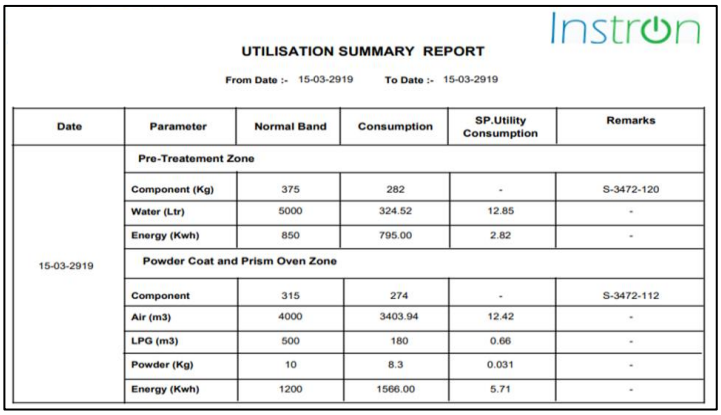
Paintshop Section: -

Reports: -



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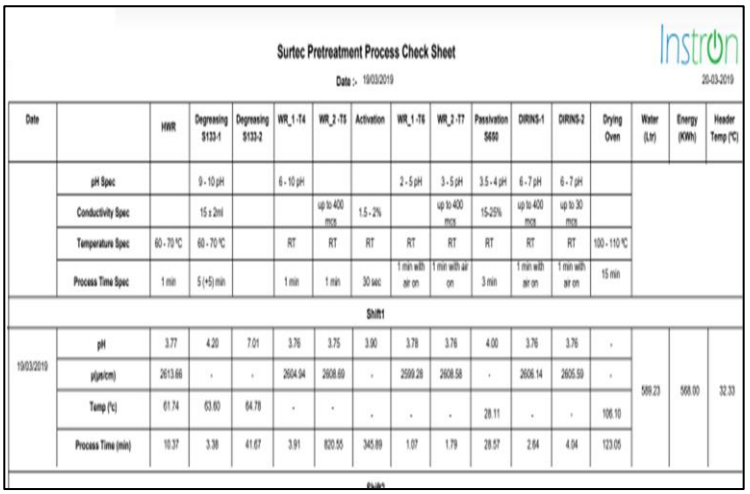
UTILISATION SUMMARY REPORT

From Date :- 15-03-2919 To Date :- 15-03-2919

Date	Parameter	Normal Band	Consumption	SP.Utility Consumption	Remarks
15-03-2919	**Pre-Treatement Zone**				
	Component (Kg)	375	282	-	S-3472-120
	Water (Ltr)	5000	324.52	12.85	-
	Energy (Kwh)	850	795.00	2.82	-
	Powder Coat and Prism Oven Zone				
	Component	315	274	-	S-3472-112
	Air (m3)	4000	3403.94	12.42	-
	LPG (m3)	500	180	0.66	-
	Powder (Kg)	10	8.3	0.031	-
	Energy (Kwh)	1200	1566.00	5.71	-



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Surtec Pretreatment Process Check Sheet

Date :- 19/03/2019 20-03-2019

Date		HWR	Degreasing S133-1	Degreasing S133-2	WR_1-T4	WR_2-T5	Activation	WR_1-T6	WR_2-T7	Passivation S650	DIRINS-1	DIRINS-2	Drying Oven	Water (Ltr)	Energy (KWh)	Header Temp (°C)
	pH Spec		9 - 10 pH		6 - 10 pH			2 - 5 pH	3 - 5 pH	3.5 - 4 pH	6 - 7 pH	6 - 7 pH				
	Conductivity Spec		15 ± 2ml			up to 400 mcs	1.5 - 2%		up to 400 mcs	15-25%	up to 400 mcs	up to 30 mcs				
	Temperature Spec	60 - 70 °C	60 - 70 °C		RT	RT	RT	RT	RT	RT	RT	RT	100 - 110 °C			
	Process Time Spec	1 min	5 (+5) min		1 min	1 min	30 sec	1 min with air on	1 min with air on	3 min	1 min with air on	1 min with air on	15 min			
	Shift1															
19/03/2019	pH	3.77	4.20	7.01	3.76	3.75	3.90	3.78	3.76	4.00	3.76	3.76	-	589.23	568.00	32.33
	µs/cm)	2613.66	-	-	2604.94	2608.69	-	2599.28	2608.58	-	2606.14	2605.59	-			
	Temp (°c)	61.74	63.60	64.78	-	-	-	-	-	28.11	-	-	106.10			
	Process Time (min)	10.37	3.38	41.67	3.91	820.55	345.89	1.07	1.79	28.57	2.64	4.04	123.05			

Refrences : -

SIGMA

To Whomsoever It May Concern

We are using IoT based Paint Shop Critical parameters monitoring and analysis system supplied by Instron Technologies LLP in December 2018.

IoT based system was designed to meet Sigma requirements and working satisfactorily. Following benefits are realized:

Area of improvement	Before IoT System	After IoT System	% improvement	Reasons for Improvement after IoT implementation
Quality Rejection	1.6	0.5	68.75	Correct measurement and correction of pH/Conductivity/Temperature/Time parameters by operators (IoT Batch reports of PT section)
Productivity	60	78	18.00	By knowing % loading, time between loading, alerting and better planning (IoT OEE/A/P/Q Reports)
Utilities				
Water (Ltr)	9800	5840	40.41	- Benchmarking of Water utility as Ltr of water/Kg of material processed (IoT Utility Summary report) - Draining PT tanks only when quality degrades (IoT pH/Cond alerts) as against at Fixed intervals - Reduced number of tanks (Due to process improvement from IoT Batch reports analysis)
Electricity (kWh)	2460	2348	4.55	- Reduced operation of DM water plant/pump (IoT pH/Cond alerts) - Reduced overheating of water in PT tanks (IoT Temp alerts)
Air (m3)	393	373	5.09	- Benchmarking of Air utility as kg of air/kg of material processed (IoT Utility Summary report) - Changing of stirring air from high pressure compressed air to low pressure blowers (Due to IoT Utility Summary for costing) - Reduced leakages due to low pressure alerts (IoT Pressure alerts)
LPG (kg)	93	78	16.13	- Benchmarking of LPG utility as Kg of LPG/Kg of material processed (IoT Utility Summary report) - Tuning of burner to reduce excess combustion air flow resulting in reduced exhaust losses - Tuning of burner for steady and reduced amount of fuel flow as against fluctuating flows(Due to IoT Flow trends analysis)

Place: Chakan, Pune
Date: 12th Nov 2019
For Sigma Electric Manufacturing Pvt Ltd, Pune
Dinesh Zope GM Automation

SIGMA ELECTRIC MANUFACTURING CORPORATION PVT. LTD.

CIOReviewIndia

Recognizes

Instron Technologies

In Annual Roll of Honor
As One of The

"10 Most Promising Industrial IoT Solution Providers -2020"

In commendation for their unbridled stride towards excellence and innovation in this field.

Sudhakar Singh
Editor
CIOReviewIndia

ENDURANCE TECHNOLOGIES LTD.

To Whomsoever It May Concern

We are using IoT based Paint Shop Critical parameters monitoring and analysis system supplied by Instron Technologies LLP in September 2019.

IoT based system was designed to meet Endurance team's requirements and working satisfactorily to deliver the purpose for which it was proposed. Following benefits are realized:

- Quality – by alerting the deviations in pH, Conductivity, Spray pressure, etc.
- Traceability – KPIs for particular batch can be traced to take corrective actions.
- Uptime - by alerting the possible reasons proactively like spray pressure, tank level, RH etc.

Endurance team is using this IoT system through web app, mobile app & email for reports/alerts actively to derive benefits.

Place: Chakan, Pune
Date: 19th February 2020
For ENDURANCE TECHNOLOGIES LIMITED Pvt Ltd, Pune

Contact Us: Instron Technologies Office No. 8 Plot No 165/1/, T Block, Priyadarshani Industry Society, MIDC, Bhosari, Pune, Maharashtra India -411026

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